

INSTALLATION/OPERATION

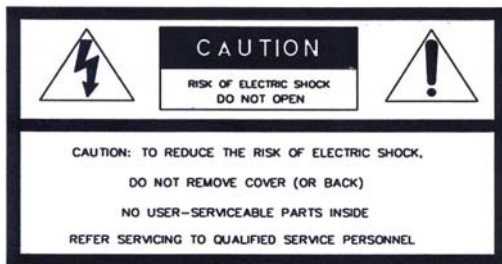
DIGITAL VIDEO RECORDER **H.264 - 120FPS** **(4/8/16 CHANNEL)**



CE FC



H.264 DVR - Installation/ Operation Manual



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: To prevent a risk of fire or electric shock, do not expose this product to rain or moisture.

- This installation should be made by a qualified service person and should conform to all local codes.
- This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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Note

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Trade marks

All names used in this manual for hardware and software are very probably registered trade marks and must be treated as such.

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1. FOR THE SAFETY OF CUSTOMERS

Caution before use

Please read this manual for proper use.

The caution described in this manual contains very important information for the safe use, so, please follow the instruction.

Please keep it whether you could reach after read.

For the safety and proper use, it marked various symbol. So, please read it to prevent your physical or financial loss.

Tips for installation

Please avoid water which could be the reason of firing or electric shock.

Clean the plug and socket.

Please keep the socket and plug clean so that you could avoid the fire. The plug should be tightly connected to the wall socket.

Do not put the unit on an unstable place.

Do not put the unit on an unstable place like rugged table or slope place.

Be careful for the installation position.

Don't put the device in humid, direct sunlight, dusty, hot, greasy condition.

Caution for proper usage

During use

In following cases, please turn off the power and remove the plug then, please contact technical support.

If you use it continually, it could be a reason for a fire or electric shock.

If smoke comes out of the device or when you smell something burning.

If a alien substance is split into the device.

If the device is dropped or the case is damaged.

If the power cable has been damaged (ex. slipped etc.)

No picture being displayed.

Don't open the case or modify.

There is the high voltage sector inside the unit so, if you open the case or modify it, it could cause the fire or electric shock.

Don't put a cup containing water or juice and small material on the device

If you spilt water or alien substance into the device, it could cause the fire or electric shock.

Don't put any alien substance.

Don't put alien substance through the fan.

Don't touch when lightning .

When the lightning starts, don't touch the plug or cable. It could cause the electric shock.

Don't touch the power plug with wet hand.

Don't unplug with wet hands. It could cause a electric shock.

Don't pull out the power cable.

Use the designated HDD

Please use the designated HDD. Otherwise, recording may be operated improperly.

Maker	HDD Capacity
Western Digital	250,500,750GB, 1TB and 2TB (except. 4CH) is supported.
Seagate	HDD is available up to 1pcs for 4CH(Max 2TB), 8/16CH.(Max 2TB)

Don't pull out the cable when plug out from the wall socket.

It could damage the cable and cause the fire.

Please pull out holding the plug.

When you move, please remove plug.

If you move the device while the plug is in the socket, it could cause a fire by damaging the cable.

Don't block the ventilation window.

When the ventilation window is blocked, it could cause the fire by the generation of Internal heat.

Don't put a heavy item on the device.

When it loses the balance and falls down, the customer could be hurt.

Keep the plug and socket clean.

Regarding the cleaning, please contact your Installer.

If there is too much dust inside the device, it could cause the fire or internal short.

Clean the plug and socket.

Please keep the socket and plug clean to avoid fire. The plug should be tightly connected to the wall socket.

Caution when you don't use the device for a long time.

If you don't use the device for a while, please switch off and unplug.

2. DESCRIPTION OF PARTS AND FUNCTION

2-1 COMPOSITION OF UNIT

Standard



CD(Client Software,
User



Power Cable



Battery



Quick Guide



Remote Controller

When you have received a product “without HDD” , the accessories

1) Bracket & Cable for HDD installing 2) fixing screws will be supplied.

※ Accessories are subject to change without notice.

2-2 FEATURES

- **Convenience**

- User-friendly GUI(Graphic User Interface)
- Easy-to-use menu composition
- Easy-to-use recorded data search (Time, Date, Motion, Alarm)
- Easy-to use menu with USB Mouse.

- **Stability**

- Auto restart after power interruption
- DB structure offers data stabilization and best storage utilization

- **Expandability**

- Various remote multi DVR's can be controlled by Web browser (PC Client System)

- **Technology**

- Embedded LINUX OS
- Totally maximum recording rate 120/100 fps
- High-resolution & high-quality H.264 algorithm
- Using Water marking & scrambling technologies,
- Strong protection recorded data
- H.264 : 1 ~ 2 Kbytes per image with resolution 360x240

- **Functionality**

- Privacy Masking Set
- Variable recording function (normal, alarm, motion, schedule, Duration)
- Full channel real-time monitoring
- Live monitoring, recording, playback, backup, remote access at the same time
- Multi channel playback
- Variable events notification to e-mail, buzzer or PC Client system

2-3 DESCRIPTION OF PARTS AND FUNCTIONS

2-3-1 Rear Panel



(1) VIDEO IN (BNC)

- 4, 8, 16 Camera input (1.0v p-p, 75Ω)

(2) VIDEO OUT

- Composite / VGA / SPOT

(3) AUDIO IN / OUTPUT

- 1 Audio Input / Output

(5) RS232

- 1 Serial Communication

(6) Network Port (RJ-45)

- Available to monitor live screen and recorded data on the HDD through Internet or LAN

(7) MOUSE

- **Front** : Port for both Thumb drive and USB Mouse
- **Rear** : This is for the PS2 mouse and may not support some USB mouse.
In this case, please insert the USB mouse into the front USB port.

(8) ALARM / SENSOR

- ALARM / 1 SENSOR INPUT, OUTPUT PORT

(9) RS485_CAMERA / KEYBOARD CONTROLLER

- 1 Serial Communication for Pan / Tilt Camera
- 1 Serial Communication for P/T/Z Control Keyboard

(10) DC POWER

- AC 110~240 V (Free Voltage) / DC 12V 3A OVER

ATTENTION

When the video format is changed, the system should be re-booted

The video format should be selected before booting

Default Passwords



“00000000” i.e. 8x Zero’s. Password is required if you need to down-power or stop recording, prompt will be displayed asking for password.

Web Client



User ID “**admin**” (not case sensitive).
Admin ID cannot be changed this is full administrator ID.
Password “00000000” i.e. 8x Zero’s

2-3-3 System Connection Diagram



2-3-4. IR Remote Controller



1. Power : Power ON/OFF
2. Rec : Start & Stop Recording
3. ①~⑨:Key for figure and character
4. P/T/Z: Entering PTZ menu directly
5. OSD : Operating OSD ON/OFF
6. SEQ : Hot key for Spot(120/100fps)
Key for SEQ operation(4808/400fps)
7. LOG : Direct access Log list
8. INFO: Direct access system Info.
9. ID : Reserved.
10. MUTE : Audio Mute
11. AUDIO : Available audio switching when user select this key
12. MENU : Entering system menu
13. SEARCH : Entering search
14. ARROW & SPLIT : Key moving left, right, up and down. Also, Screen split display shows
15. VOL”+,-“ : Up, down volume
16. CH “+,-“ : Up, down channel(s)
17. ► (►) : Play(or fast forward)
18. ◀ (◀) : Reverse play
19. II : Pause
20. ■ : Stopping playback
21. Cam : Changing PTZ icon
22. P/T : Pan &Tilt
23. Z/F : Zoom/ & Focus
24. DIS : Channel Division

2-3-5. OSD Description-P



Status Bar is shown HDD capacity, Event, Network connection, Time, etc using by icons.

-HDD Capacity  : 135GB is used out of 149GB

-Event : Power Fail, Video loss, etc will be shown when it is occurred.

-Network connection  : It is shown that admin or user is connected.

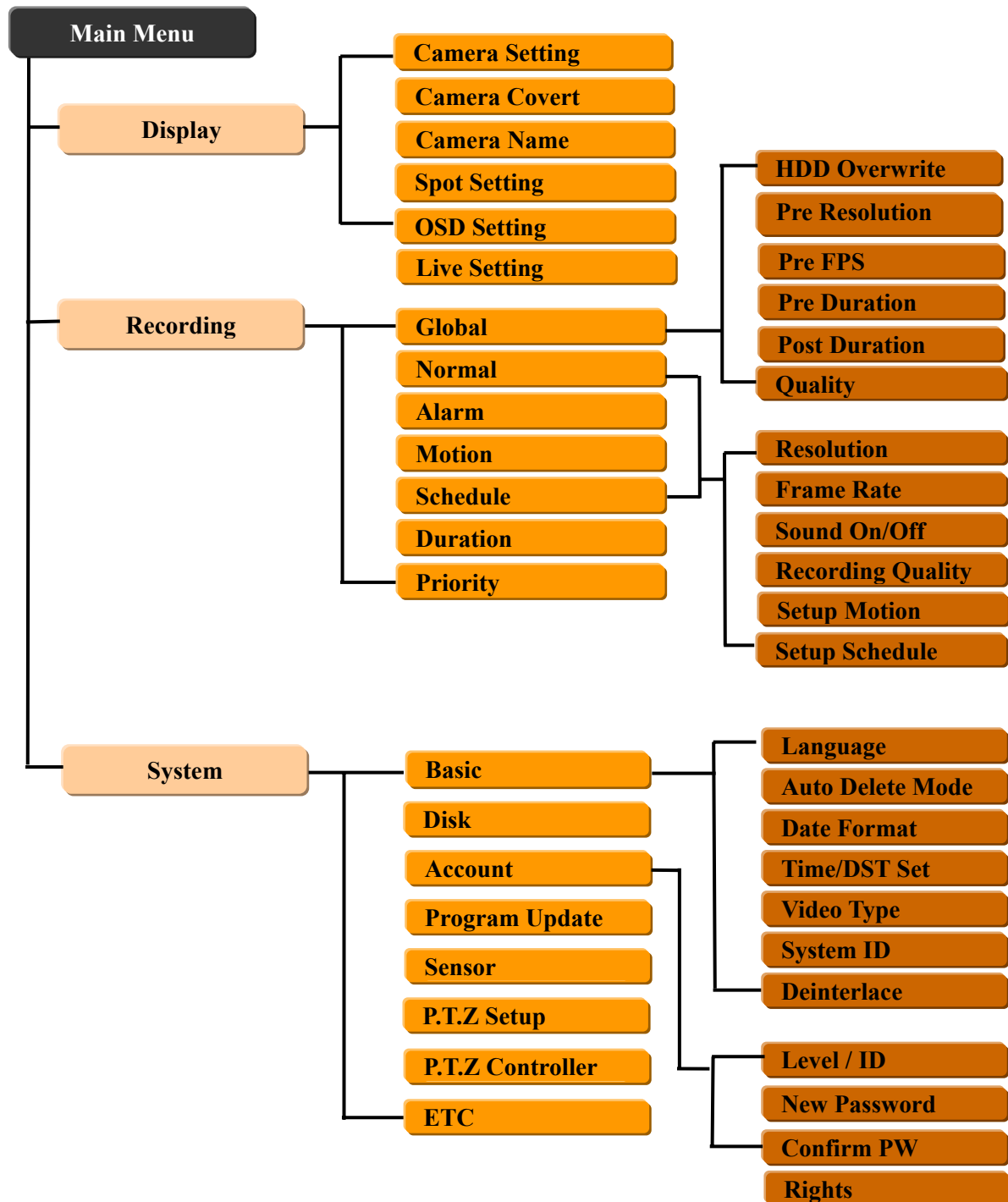
-Date/Time

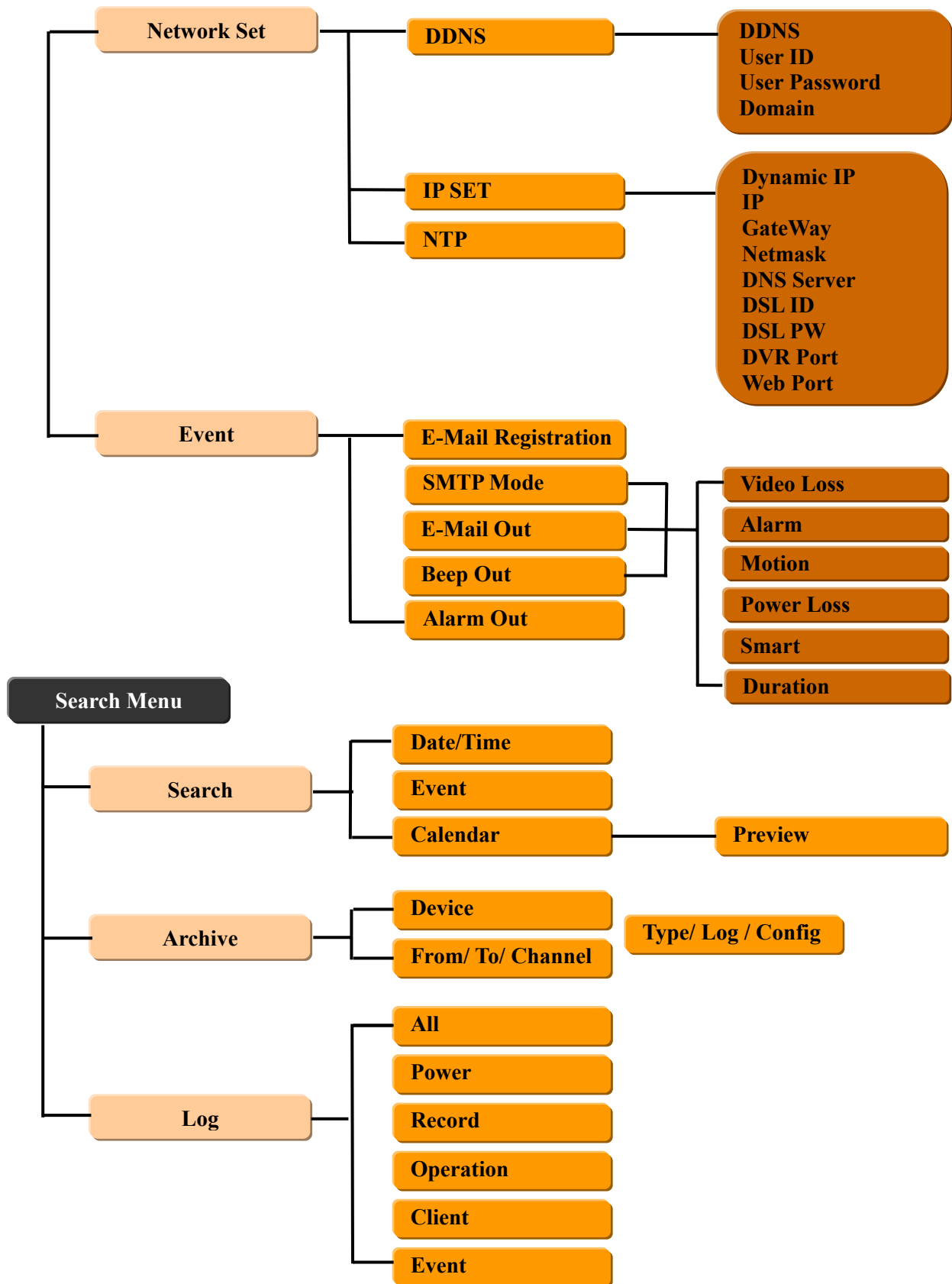
*Others :

-Backup  -Mute  -USB Stick:  - Mouse 

3. MENU

3-1. Menu tree



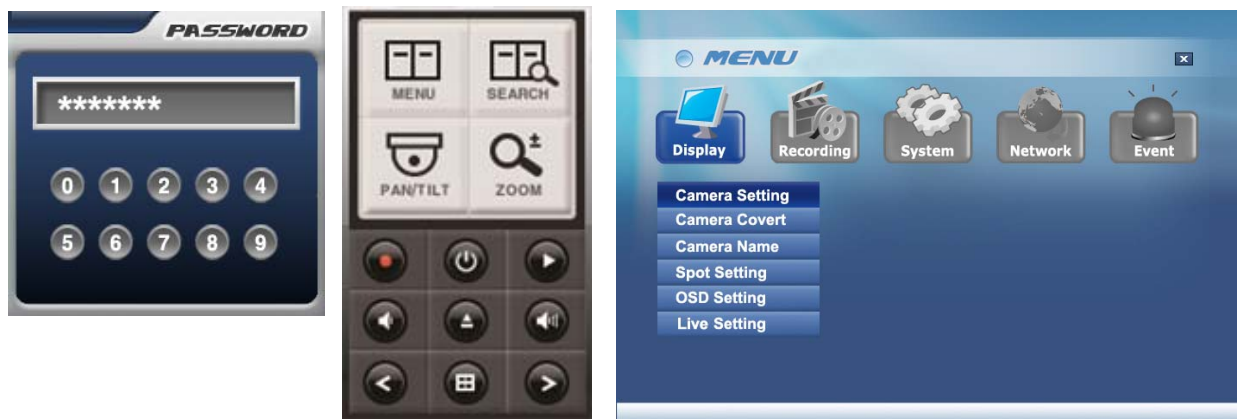


3-2 Main Menu

NOTE

Before use, be sure to setup the unit properly.-P

When 'MENU' button is pressed, "Password" is required first. Then, below menu shows on the screen.



'- Mouse

Please use UP(▲) / DOWN(▼) Numeric buttons on the front panel or Mouse to move to next menu.

To move to the submenu, use the "SELECT" button or mouse. It will be applied instantly without "Apply".

Display

-Camera Setting



User can change Brightness, Saturation, Contrast, Hue.

- Camera Covert



It allows hidden Camera, which mean, even live monitoring screen isn't shown on the screen(black screen), however, the recording(if recording is "on" condition) is activating.

- Camera Name



Camera title can be written on the screen in both System(DVR) and Client(Network). It will be available up to 30 characters, if the monitor couldn't show it in 1 line, it will be shown as ____ For example, 'FIRST MEETING ROOM' -> 'FIRST MEETIN...'

- Spot Setting



< Channel Division >



< Event >

Spot output is used when user would like to see event channel instantly. For example, if you want to see 'Motion' event channel, please set as 'Motion' in the 'Mode' section then, select duration. Spot Mode is available from 'Single/Quad/9Channel/16Channel/Alarm/Motion/Audio'.

- OSD Setting

User can select OSD On/Off, Event, Camera Name on/off and Blending as well.

New setting value will be applied instantly without pressing "Apply".-P



- **EVENT Clear** : It is for erasing OSD characters related with events.

- **APPLY** : In order to save any modified setting value, please press "SEL" key in the "SAVE"

NOTE

In every first sub menu_ Display, Recording, System, Network, Event has "SAVE" feature in the above. If any setting value is changed, "SAVE" is required to save the new value. User can simply save new value pressing "SAVE" once in one sub menu. Camera Setting & OSD Setting doesn't need to be pressed "SAVE".

Recording

In our system, all recording setup will be applied globally.

-Global

All the setup values will be applied globally to all channels.-P



-HDD Overwrite

It sets the recording mode when the HDD capacity is exceeding. It can be selected between “On” (overwrite) / “Off” (stop).

- Pre Resolution

It supports 360x240 / 720x240 / 720x480 mode(based on NTSC). The default is 360x240 and “Sel, ↑, ↓” arrow button is for changing the figures.

-Pre Duration

As the system support “Pre recording” function, user can select frame rate and Duration as well.

-Post Duration

After event occurred, it sets how long the recording continues. The value is selectable among 5/ 30/ 60/ 90/ 120/ 150/ 180/ 210/ 240 sec.

-Quality

It selects among High, Mid, Low .

-Privacy Region Set



User can select privacy region with mouse after dragging on the display for privacy purpose.

-Normal



It executes the continuous recording according to the designated set-up value.



The above shows available frame rate each channel. In 360x240 modes, 30 fps is available each channel (totally 120fps), 720x 240 is 15 fps each (Totally 60fps), 720x480 is 7.5 fps each (Totally 30fps). Individual frame rate control is available and selecting audio on/off individually as well. Figures can be changed pushing the “↑, ↓” button.

-Alarm



It executes the recording when sensor is taken. How to set is same as Normal.

-Motion



It executes the recording when motion is captured. User can select Recording Resolution, Frame, Audio On/Off, Sensitivity and Region.



CH1	4CIF	8 FPS		High	Sel
CH2		8 FPS		High	Sel
CH3		8 FPS	☒	High	Sel
CH4		8 FPS		High	Sel

- Motion Sensitivity

It consists of High, Mid, Low.

- Motion Region

The following will be displayed when user selects the menu.



The detection area is divided 10x8 cells. Default is all-cells activating mode. 1~10 cells(white color background) is disabled area. “SEL” button is required for selecting some area.

NOTE

When you record the camera image with the motion recording mode, the data file will be saved depending on the motion sensitivity. So, higher caution is required to apply the sensitivity to the actual recording.

- Schedule recording



It executes the recording as per the programmed time table.

The above shows available frame rate each channel. In 360x240 mode, 30fps is available each channel (totally 120fps), 720x 240 is 15fps each (totally 60fps). 720x480 is 7.5fps each (totally 30fps). Setting values will be changed pushing the “↑, ↓” button



“SEL” button is used for selecting relevant time and day. Arrow Key will be used for movement.

- Duration



It helps user to set FPS automatically if user select Recording & Audio On/Off in each channel and days to record. So, if the user set Recording & Audio On/Off in the channel and set the days, it will shows the assigned FPS.

- Priority

It specify the priority among 6 kinds of recording methods. (Normal, Alarm, Motion, Schedule, Audio Event, Time Lapse) If Normal is 1st priority, the recording is carried out as per normal recording's setup value.

System

- Basic



User can set Language, Auto Delete Mode, Date Format, Time/DST Set, Video Type, System ID, Deinterlace. Also, Initialization and checking Information is available.

-Language

English, Italian, French, Hungarian, Slovak, German, Russian, Polish, Dutch, Spanish, Portuguese, Chinese, Japanese are available. The default is English.

- Auto Delete Mode

Auto Delete Mode will remain recorded data only for specified days and the rest days will be erased automatically. User can select from 00days to 99days.

- Date Format

Can select among the formats, mm-dd-yyyy / dd-mm-yyyy, yyyy-mm-dd.

- Time / DST Set

User can change Time for DVR and able to set DST in this menu.



DST OFF

If user doesn't want to set 'DST', please press 'OFF' in the Time/DST set. Then, press 'Save'.

Time Set

It is available as above image after changing the year, date & time on virtual keyboard, "OK" is required to be applied.



DST Set

It will be available either by Day or Date. When user press 'User Define', available country will be shown. then select Start & End Time and Offset as well. At last, press 'Apply' to save the figures.

NOTE

PLAYBACK FOLLOWING TIME CHANGE

The DVR uses the time and date to index video on the hard disk drive so you can find it later.

Changing the time can cause the DVR to work improperly when you try to play back video. If you set the hour ahead, this is not a problem. But, if you set the hour back, there will be more than one recording at the same time.

Such as during the October Daylight Saving Time changeover, if you try to search for video between 1 a.m and 2 a.m, the recorder may not operate properly because there will be two hours of recorded video during this time period. To view video during this overlapping time period, you must start playback before 1 a.m, then recorder will play both hours between 1 a.m and 2 a.m.

You cannot do a backward search through the overlapping time . But, you can do forward search.

-Video Type : NTSC vs PAL

Video Type is able to set by software, it can be simply done in this menu without rebooting or initialization.

- System ID

It is used when user use IR remote controller to control more than 1 DVR. It is designed to prevent the same series of DVR works together in 1 IR remote controller at the same time. If user set each ID in both IR remote controller and DVR, the IR remote controller only work with same ID of DVR.

- Factory Default

All the menu value will be returned to the factory default. When the DVR is in recording mode, the system will ask you whether you want to stop recording then execute Initialization.

- Information



It will show the HDD capacity and version information for UBOOT, OS, Client, Player, Application, DATA version and IP address as well.

- Disk



User can format the HDD disk (Internal and External as well), and if there is no device to format, the system will show you a message 'Not Found'.

User can see the current status of Hard disk.

- Account

There are ADMIN, MANAGER and 4 USERS for 'ACCOUNT'.

ADMIN can assign rights to MANAGER and USERS. MANAGER can assign rights to USERS.

So, this will give an option for flexible account level for multi level's usage.



Please check Level, Activate On/Off, ID, Password(Confirm PW) and Rights for each level.

- Program Update



The latest firmware version can be upgraded through USB 2.0 Port using Memory Stick. When memory stick connects USB port,  will be shown on the status bar of the screen. Then, enter “menu”-> “System Set”-> “Program Update”. If the system recognize “new program”, “New program found” will be displayed on the screen. Then, please buttons “Select” Key. Processing percentage will be displayed.

NOTE .

1. If the system doesn't recognize “new program”, “Program Update Device not found! Press ‘Menu’ Key to Exit” will be displayed.
2. USB compatibility has been tested successfully, Lexar Jumpdrive 128/256MB, Sandisk Mini Cruzer & Cruzer Micro 1GB, SANDISK 1GB, 512MB, MARUZEN 1GB
3. For system stability, please off 1) recording 2) playback 3) network connection during upgrading.
4. After updating program, reboot should be required.

- Sensor



Sensor Input is selectable N.C, N.O, None.

- PTZ Setup (will be supported soon)



Protocol is available Pelco D & P, Dongyang, Vista PD and Baud Rate can be selected among 2400, 4800, 9600, 19200 BPS.

- PTZ Controller (will be supported soon)



PTZ Controller Model is available QSC-1000 and Vista KBD and Baud Rate can be selected among 2400, 4800, 9600(QSC-1000 Default), 19200 BPS. Setting way is same as PTZ Setup.

- Etc



Key Beep sound and Mouse sensibility can be selected on/off and High, Mid, Low
User can use Touch screen monitor in order to work with DVR.

Network (If you connect network, this icon will be shown)

To enter Network Set menu, system ask password (Default is 00000000).

When user is using the fixed IP, each address is required to be filled out as per network environment.

In fixed IP environment, no need to change DVR & Web Server Port.

As per DVR & Web server port, please refer Appendix 4.

-DDNS

For DDNS usage, please refer to below image.



DDNS Server is needed when clients connect to the DVR, usually for Dynamic IP, since clients don't know an IP of system DVR. (Please register your ID & domain at www.ddns-dvr.com in which you can use DDNS server as free of charge)

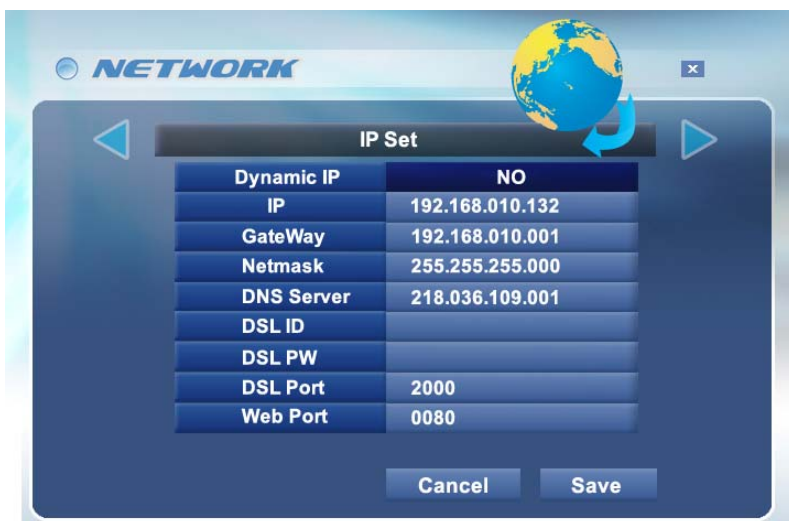
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Then please set 'DDNS : ON' and User ID& PW and Domain(don't need to input ddns-dvr.com) as well in the DVR. After filling the blank, please select 'DDNS Status Check' and if it shows 'DDNS Status Check OK', you will be successfully connect the network through the domain.

If User want to use DDNS quickly, please select DDNS-DVR.CON(AUTO) and use the given number as a domain (000A05054432.ddns-dvr.com)

-IP Set

If user is on the condition of "Dynamic IP or Non-Dynamic IP(Fixed IP), the following will be shown.



IP Set	
Dynamic IP	NO
IP	192.168.010.132
GateWay	192.168.010.001
Netmask	255.255.255.000
DNS Server	218.036.109.001
DSL ID	
DSL PW	
DSL Port	2000
Web Port	0080

Cancel Save

-NTP



NTP	
NTP	ON
Type	Default
Time Server	time.bora.net
City	None

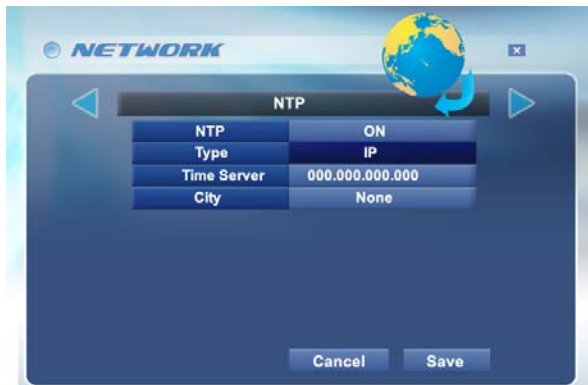
Cancel Save



NTP	
NTP	ON
Type	Domain
Time Server	
City	None

Cancel Save

It supports keep matching local time from internet to the DVR.



User can select the city of each county

EVENT

-E-mail Registration



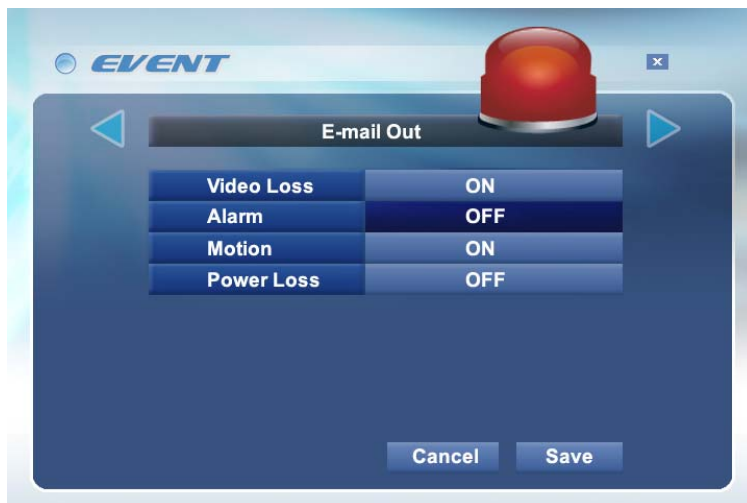
At E-Mail registration menu, user register the e-mail address to receive several event notification. To register the e-mail address, 1) input the address for users and sender 2) Select Report Period 3) Try “ Send Test Mail”.

NOTE :

1. Sender address should be input. If not, e-mail doesn't work. If you input DVR as mail ID & company.com as domain, sender's information will have “QT@digital.com
2. IP & Gateway in the system should be set up first .

E-MAIL Report is available among Daily/ Weekly/ Immediately. Daily report will be done 00(H):00(M) each day and weekly report will be done 00(H):00(M) on Sunday.

-E-mail Out/ Beep Out/ Alarm Out-P

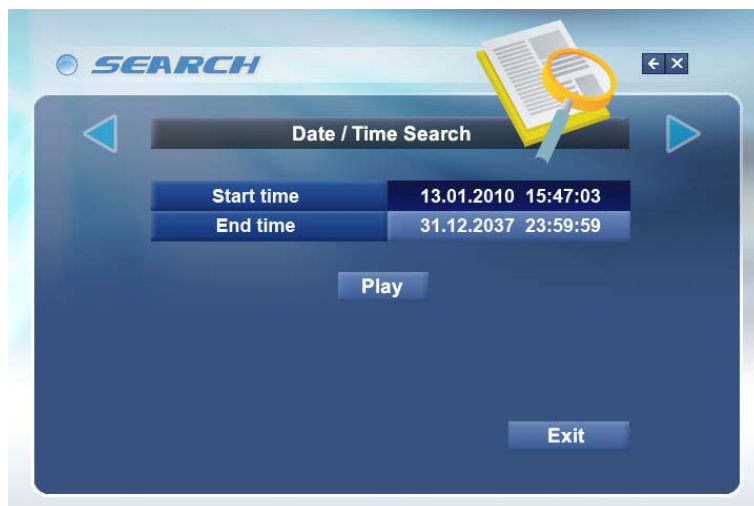


When event happens, the each output is operated as per setup value. Events such as “ Video Loss/ Alarm/ Motion/Power Loss” will be sent to E-Mail address or Beep or Alarm according to setup value.

4. Search

- Date / Time Search-P

If you select “Date/Time”, the following window will be shown.



User can select Star & End time and click Play button in order to playback.



User can change channel division and perform Pause, playback(4steps), reverse(3steps).

- Event

If you select “Event”, the following will be shown



The (◀), (▶) buttons of Arrow key buttons for selecting each clause .

If you select one of the events , it would be displayed recording data of each event as the above and then click one of the recording data of each event which you want and playback will be operated.

- Calendar Search

If you select “Calendar”, the following will be shown



The date which has recorded data is displayed in a white color . you can select the date in Calendar as using arrow buttons. And if you select the date, It will be displayed the sub menu of the hour and minute as the below.

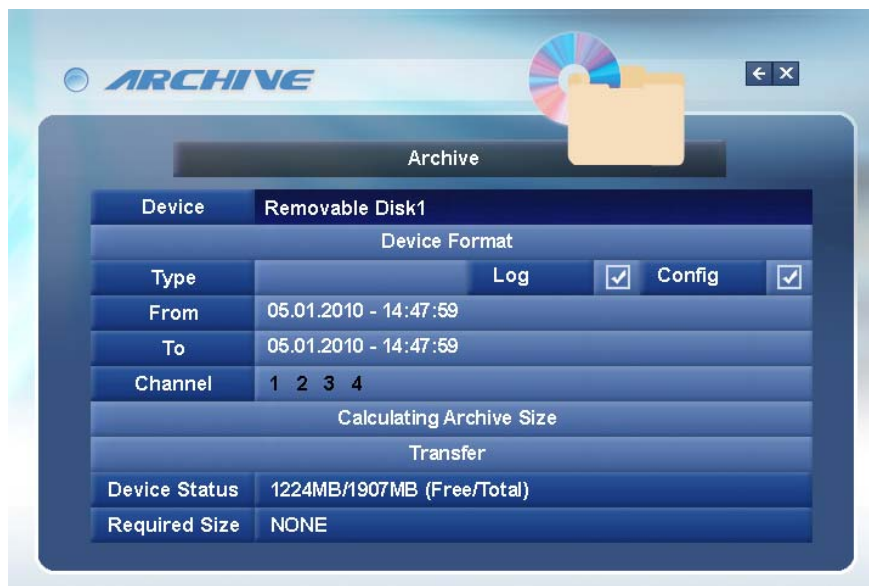


The hours which has the recorded data are displayed as the color bar of each event and if the hours which you want to play are selected, the following sub-menu will be displayed



The minutes which have recorded data will be displayed as the color bar of each event and if the minutes which user wants to play is selected, the playback is operated.

- Archive



1). INTERNAL

Archive Device

Internal DVD-R is available.

> Note :

1. Manufacturer guarantee

* DVD-R drive : LG GSA-NS50(DVD-R disk: Imation or Melody brand, 8x Max)

2. When DVR system try to read disk or drive, “ READING OPTICAL MEDIA” message will be shown and no key buttons works.

Device Format

Format for DVD-R is not needed. When use DVD-RW, format should be done first.

File Format

Exclusive file is available and it will be played with our own player. Player is downloaded automatically together with video data. User can select Log in order to download log list as well.

Config

User can copy setting value of DVR and export to another DVR as below,
Search -> Archive -> check box of Config -> click Calculation Archive Size -> click Transfer
=> Menu -> System -> Program Update -> Config Message -> click SEL button -> Finished

User can set up the time which is required to be backed up to the internal DVD-R Drive with channel.

Channel

When you select exclusive type, all channels can be downloaded at the same time.

Transfer

Downloading the backup data to internal disk . Percentage during downloading will be shown.

* Note :Highly recommended that network & playback would be off to speed it up during downloading to internal DVD/CD-R disk.

2). EXTERNAL

When Memory stick connects USB port, the icon  will be shown at the bottom of Monitor.

Backup Device

USB memory stick(thumbs drive) is available.

Device Format

To back up the data, please delete existing files on the stick first..

File Format

Exclusive is available . Exclusive file will be played with our own player. Player is downloaded automatically together with video data.

From/ To

You can set up the time which is required to be backed up to the memory stick .

Channel

If you select exclusive, Even all channels can be downloaded at the same time.

Transfer

Downloading the backup data to archiving device. Percentage during downloading will be shown.

* USB compatibility has been tested successfully for these recommended USB devices.

USB Sticks : The Guaranteed Brands Only (Refer to P.28)

DVD/RW Plextor PX-716UFL

Lite-On CDRW (LTR-52327SX)

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* Procedure for saving data onto a USB device.

1. Insert USB device. Wait until USB symbol appears on screen
2. Press "Search" button
3. Go to "Backup" Press "SEL" button.
4. Select Start & Stop times (Press "SEL" to change, use numeric & character buttons) Press "SEL"
5. Set channel number (cameras 1~16) Press "SEL"
6. Select "Calculate Backup size"
7. Select "Transfer"
8. The percentage status of data backed up is displayed on the screen (while back up, user can do other work as Pressing "menu" button > Multi tasking function)

"Exclusive" allows all cameras to be selected and recorded.

* PC Playback

1. Insert USB device
2. Folders & Files on device: *download, bkplay48, autorun, client48.cab, client.htm, index.htm, tagscrip.js*
3. Double Click "*bkplay48*"
4. Local search > click "play" button

LOG

ALL/POWER/RECORD/OPERATION/CLIENT/EVENT



User can see events in LOG menu, and it is splitted. Total 2500 of Log are available.

*Sub Menu of Log List

Power : Power on, Power off, Power fail

Reocrd : Rec fail, Rec start, Rec stop, Rec error, Rec full

Operation : Play start, Play stop, HDD format, Menu set

Client : R_Login, R_Logout, R_Logfail, R_Play, R_Transfer, R_Rec on, R_Rec off, R_Upgrade

Event : Alarm, Motion, Audio, Videoloss, Email_fail

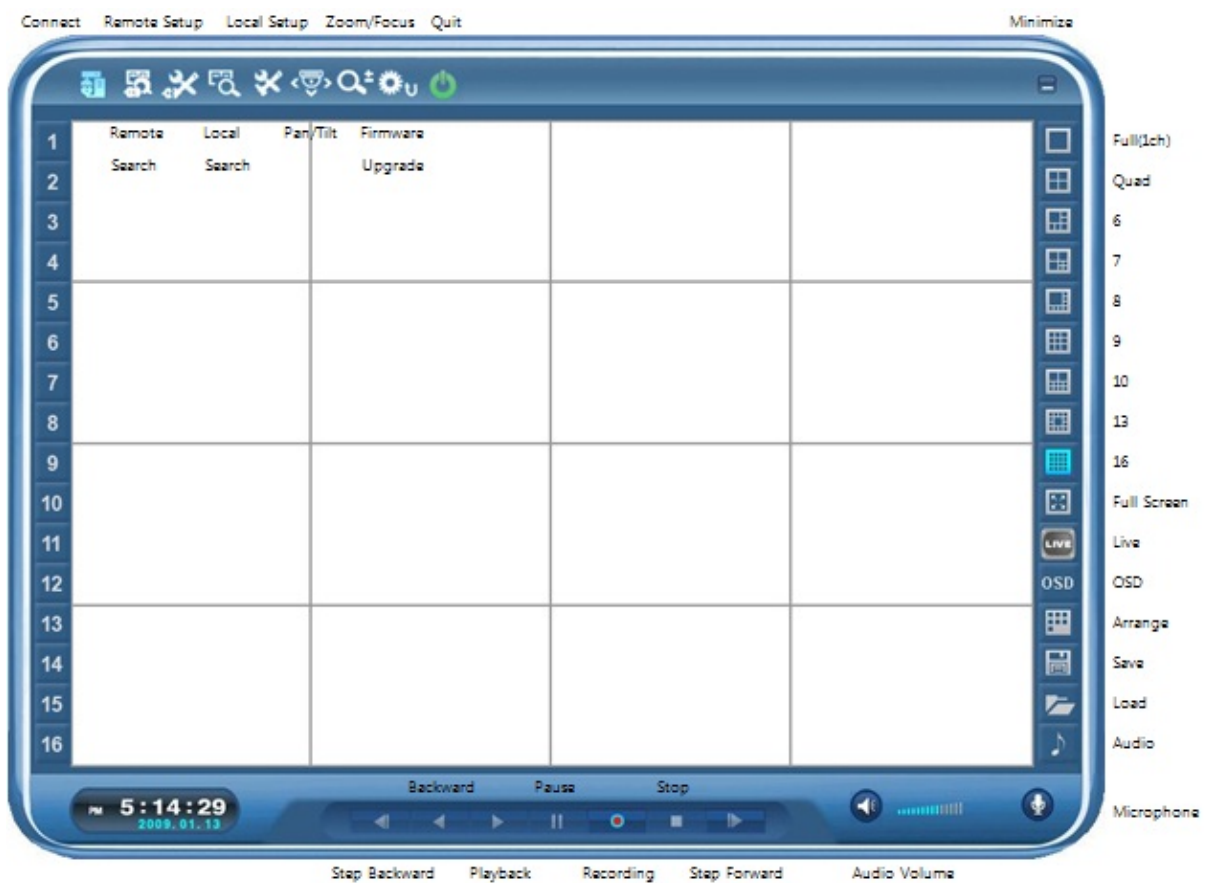
5. CLIENT PROGRAM

5-1. Network Connection

Minimum PC specification

CPU : Core 2 Duo 1.8GHz, Graphic : 256MB

Name of icons on the client screen



1) IP Insertion through IE -

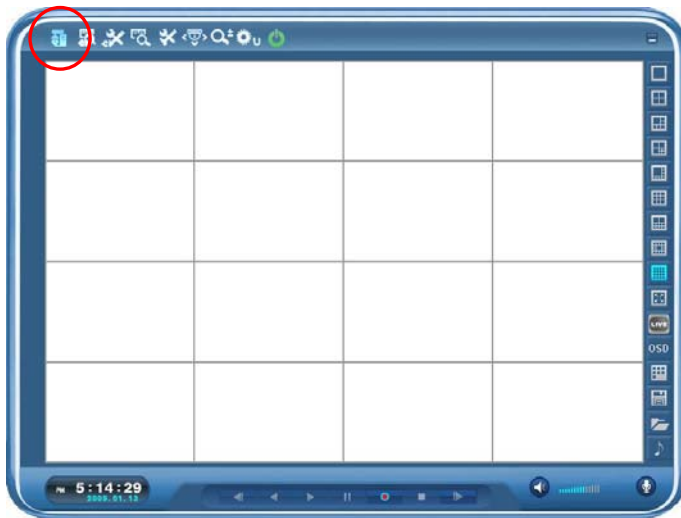
Connection will be done just writing DVR IP address on the Internet Explorer window. If domain is kept to reach DVR by DDNS server, it is allowed to write domain name directly.

Downloading ActiveX Control

When DVR connects network, the window to download active X control will be displayed in case that no downloading "Active X control" has been done or one installed DVR is higher version than PC Client. Then, select "Yes".

2) IP Insertion through Network Installation -

User can also simply connect network via Network Installation(Product CD)



When User click the button of 'Connection', , of Network installation program, the IP SET window will be appeared to connect to a DVR.

IP	http:// 192.168.10.132	
Port	2000	Default
ID	admin	
Password	••••••••	
		OK Cancel

Please put DVR IP address, DVR Port, ID, Password in the blank then press “OK” button.

Live on/off :



Live monitoring will be started automatically when you connect network.



H.264 DVR - Installation/ Operation Manual

Channel Division (1, 4, 6, 7, 8, 9, 10, 13, 16) :

It is available during monitoring or playback with right buttons on the screen.

1) Single



2) Multi



Full Screen on/ off



The Full screen will be shown up as above.

OSD on/off :



(SMART)ARRANGE on/off :



When Channel direction is mixed on the screen, it makes the camera channel in order.

Image Save / Load



SAVE : This is for saving format either JPEG or BMP or TIF. There is no change on the main screen when user press "Save" button.

LOAD : When user click "Load", there are lists of saved images. If user select one of the lists, there will be shown the image with data information(Status-Live/Playback, IP address, CH No.)

Playback (Step Backward, Backward, Playback, Pause, Recording, Stop, Step Forward)



Audio (Mute, Volume, Microphone)



- ※ Select Audio : Select Audio from the channels, it toggles in order.
- ※ Microphone : It is used for transmitting sound to System through microphone.

Quit (Stop Client program)



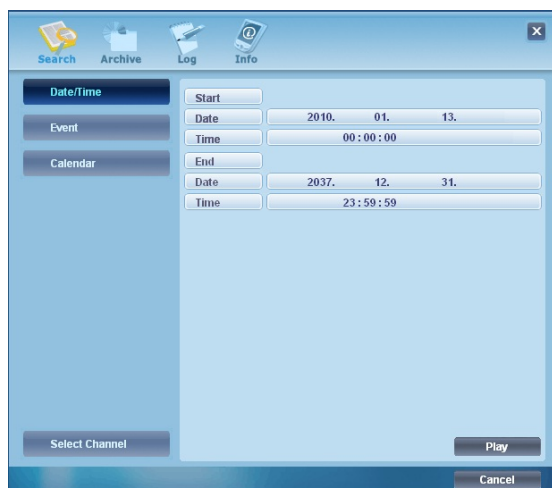
Remote search



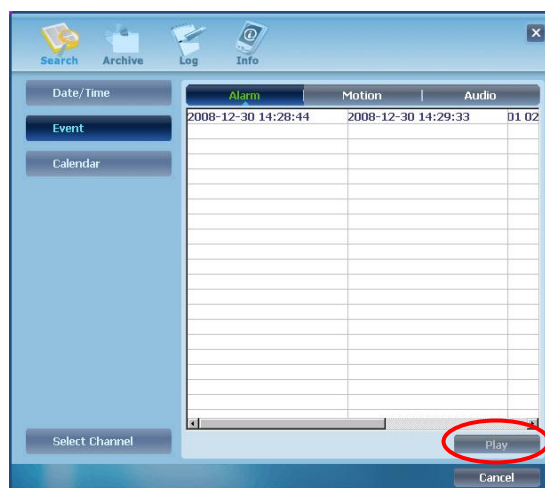
Search (Date/Time/Event/Calendar), Backup(Remote Backup), Log(Remote Log) are available.

1) SEARCH

- Remote search – Date/Time



- Remote search – Event

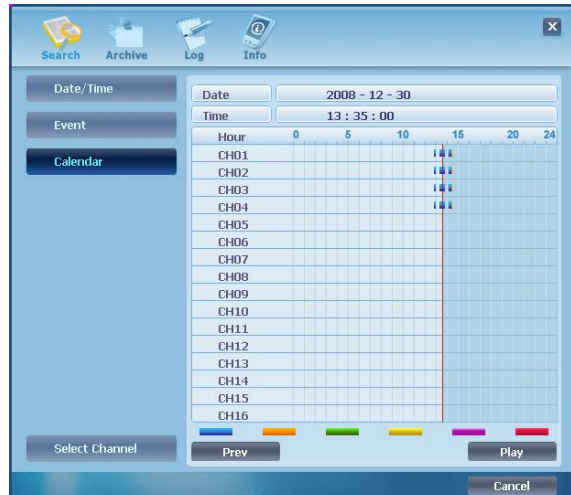
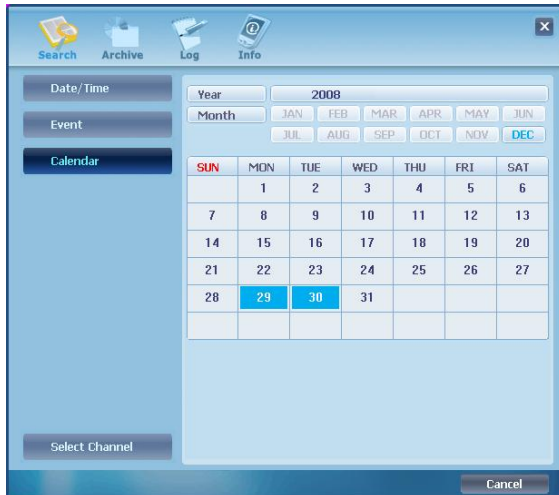


When user click “Play” button, this windows disappears and Remote Playback will be started.

If user click one of the lists, “Play” button will be activated. Then click “Play” for Remote Playback.

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- Remote search – Calendar



If user click one of the date in blue (recorded data), user can see the details as follow picture.

There are 2 options for Remote Playback.

- 1) Drag the Red line to the color bar(I.e. Blue : Normal Recording)
- 2) Click the point which user want to playback on the blue bar then the red line will be dragged to the point.

Then click the “Play” button for Remote Playback.

- Select Channel :



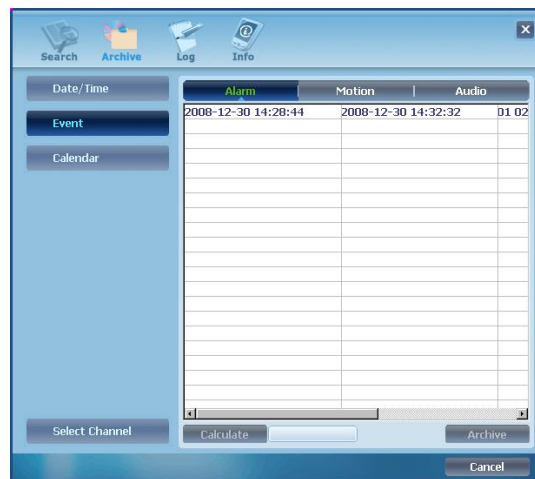
User can simply include/exclude channel what user want to Search. It is available for Search, Backup and Log as well.

2) Archive

- Remote Archive – Date/Time



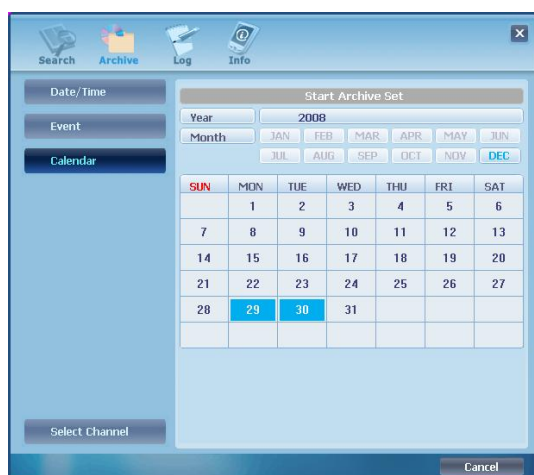
- Remote Archive – Event



Select Start Date&Time and End Date&Time as well through the light grey bar for backup. Then, click “Calculate” to check the data size. At last, when the data size is shown beside the “Calculate” bow, please click “Backup” button to make backup data.

If user select one of the lists, then “Calculate” button will be activated. Then, press “Calculate” to check the data size and press “Backup” finally.

- Remote Archive



– Calendar Start



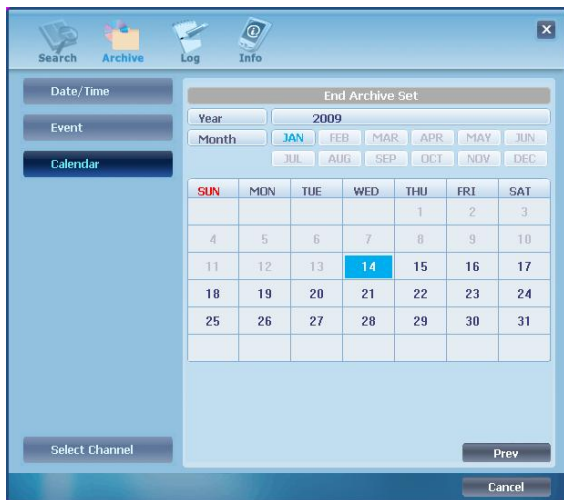
If user click one of the date in blue (recorded data and able to make backup file), user can see the details as follow picture. There are 2 options for Remote backup in schedule.

- 1) Drag the Red line to the color bar(I.e. Blue : Normal Recording)
- 2) Click the point which user want to playback on the blue bar then the red line will be dragged to the point.

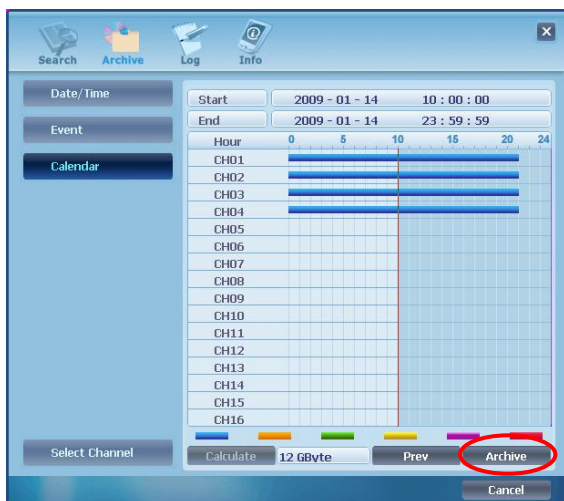
Then click the “Play” button for Remote backup.

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Please, click “Next” button to set “End Backup SET” as follows.



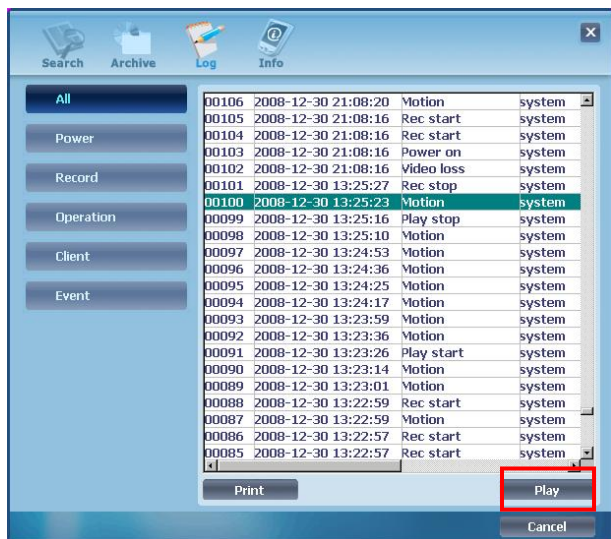
The procedure is same as “Start Archive”.



At last, check the data size and press “Archive”.

Please note that we can see the preview with pressing button “Prev” before doing Archive.

3) Remote Log



User can see the “log list” as “ALL” or relevant log only by choosing it’s sub-menu.

※ Sub Menu of Remote Log

Power : Power on, Power off, Power fail

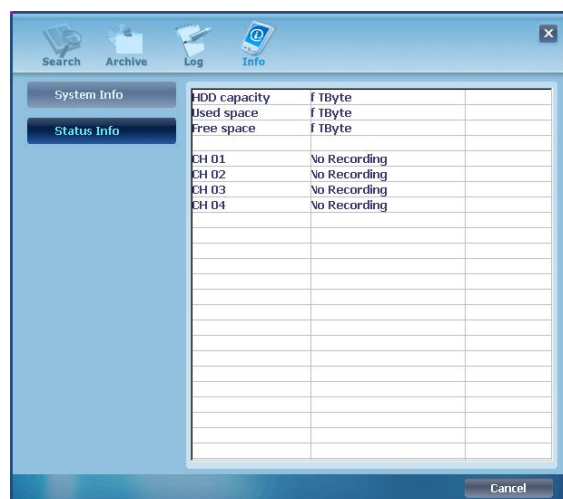
Reoord : Rec fail, Rec start, Rec stop, Rec error, Rec full

Operation : Play start, Play stop, HDD format, Menu set

Client : R_Login, R_Logout, R_Logfail, R_Play, R_Transfer, R_Rec on, R_Rec off, R_Upgrade

Event : Alarm, Motion, Audio, Videoloss, Email_fail

- “System Info” of the Remote Log - “Status Info” of the Remote Log



User can see Mac address / System version information.

It is shown status of both HDD disk and recording mode by channel.

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Remote Setup : Checking settings menu (Same as DVR)



1) Display

- Camera Setting



- Camera Covert



- Camera Name



Up to 32 Characters are available for Camera Name.

- Spot Setting



- 1) Please set "Mode" first then click "OK"
- 2) Select Duration using the white bar, user can select/unselect all at the same time.

– OSD On/Off



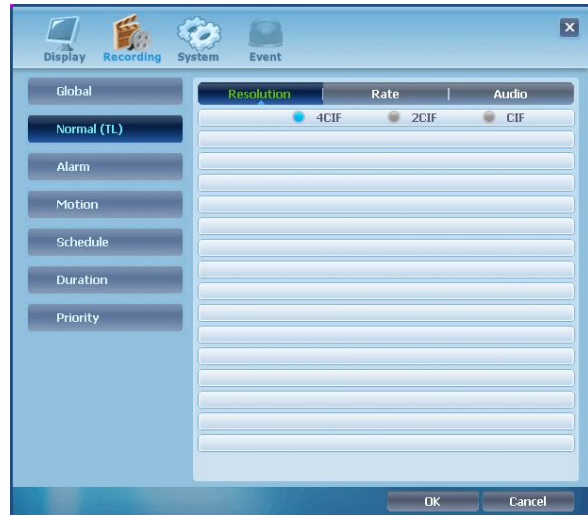
User can select OSD On/Off and setup PTZ display, Menu, Password Entry time and Blending as well.

2) Recording

– Global



– Normal



User can change Normal Recording Rate after moving with pressing the bar and select Audio ON/ OFF in each channel.



– Alarm

User can change Alarm Recording Rate after moving with pressing the bar and select Audio ON/ OFF in each channel as the same with Normal Recording.

– Motion



User can change Motion Resolution, Recording Rate after moving with pressing the bar and select Audio ON/ OFF in each channel.

User can change Motion sensitivity after moving with pressing the bar in each channel.



The motion area will be displayed when user select the Region button.

The detection area is divided 10x8 cells and default is all-cells activation mode.

The transparent cells are disabled area but, it can be changed able area after clicking on it.

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– Schedule

User can change schedule Resolution, Recording Rate after moving with pressing the bar and select Audio ON/ OFF in each channel.



The calendar will be displayed when user select the Set button and User can select / unselect day and time after clicking on it.

– Duration



User can select Duration of Resolution, Rate and Audio ON/ OFF in each channel.

User can change Duration Days after moving with pressing the bar.

– Priority



User can select recording priority among 5 kinds of recording methods. If Normal recording is 1st priority, the recording is proceeded as per normal recording setup value.

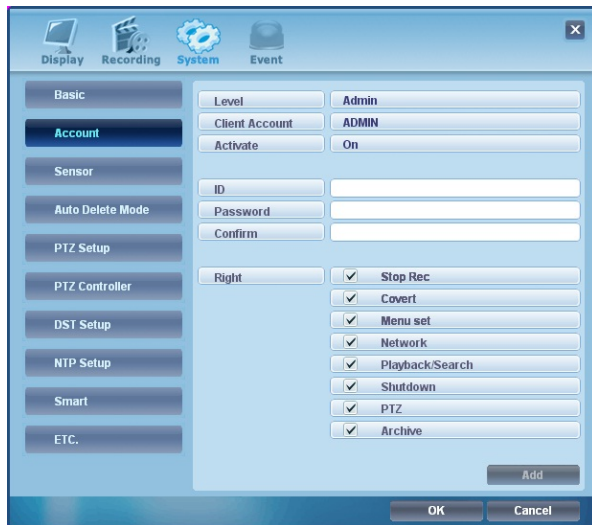
3) System

– Basic



User can select language, Date format, Video type, System ID

– Client Account



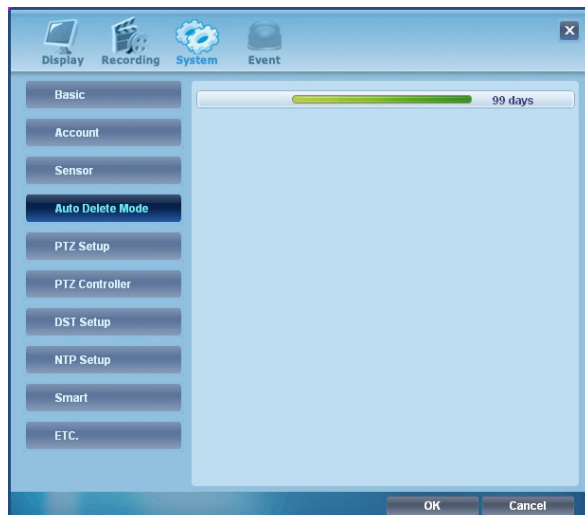
Administrator can add 1 manager, 4 users in Client account, user ID & password has to be registered at the system first to connect with a 'user level' and can access without registering. Administrator can add, edit and delete user account in Client account after clicking blank box in the Right.

– Sensor



User can select None, N.C and N.O in each Sensor.

– Auto Delete Mode



Auto delete mode will remain recorded data only for specified days and the rest days will be erased automatically.

– PTZ Setup

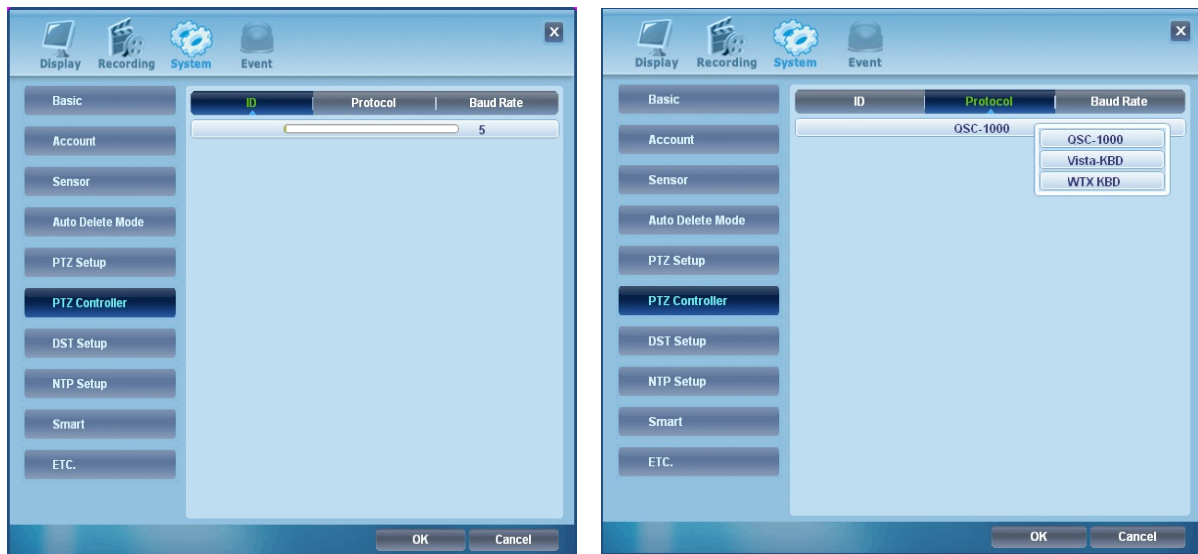


User can input PTZ camera name and can select available protocol in each channel.



User can select available Baud rate of PTZ camera in each channel.

– PTZ Controller



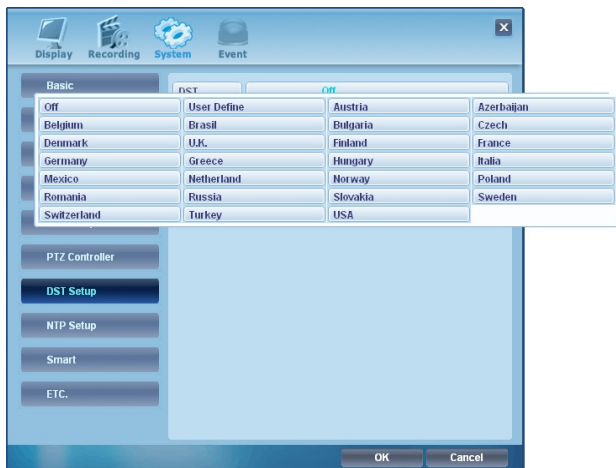
User can select PTZ Controller ID from 1 to 5 and increase/decrease after pressing +/-1 or moving with pressing the bar up to number 255 and select available Protocol.



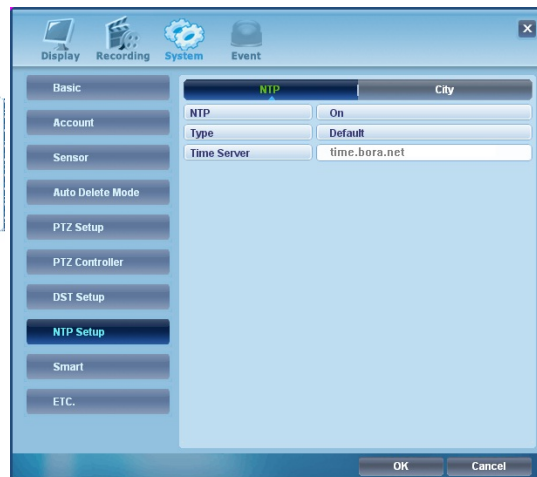
User can select PTZ Controller Baud rate from 2400bps to 19200bps.

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– DST



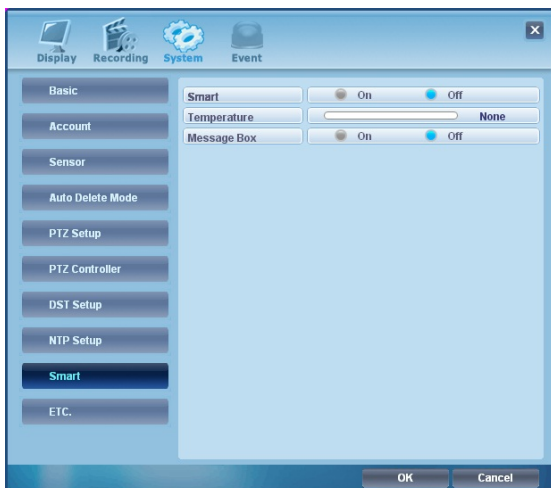
– NTP



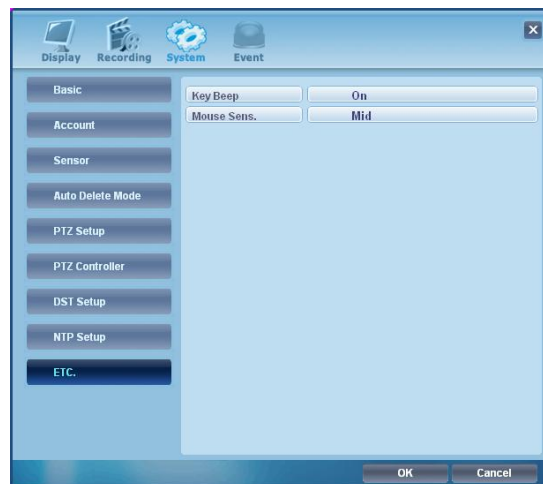
User can setup Daylight Saving Time in DST Setup.
User can select available country default or can set it up individually.

User can select NTP On/Off and City to match DVR time to Internet Standard time.

– SMART



– ETC



User can select Smart function & Message Box On/Off and can see Temperature of Hard disk

User can select key beep button On/Off and Mouse sense High, Mid, Low

4) Event

- Email Registration

The screenshot shows the 'Event' configuration window with the 'E-mail Registration' tab selected. On the left, there are buttons for 'E-mail Registration', 'E-mail Out', 'Beep Out', and 'Alarm Out'. The main area contains three input fields for 'User 1', 'User 2', and 'User 3', all of which are empty. Below these is a 'Sender Address' field containing 'TEST@DIGITAL-QT.COM' and a 'Report Period' dropdown menu set to 'Immediately'. At the bottom right is a 'Send Test Mail' button. The window has a standard title bar with 'Display', 'Recording', 'System', and 'Event' icons, and 'OK' and 'Cancel' buttons at the bottom.

User can register e-mail address up to 3 people and select report period.

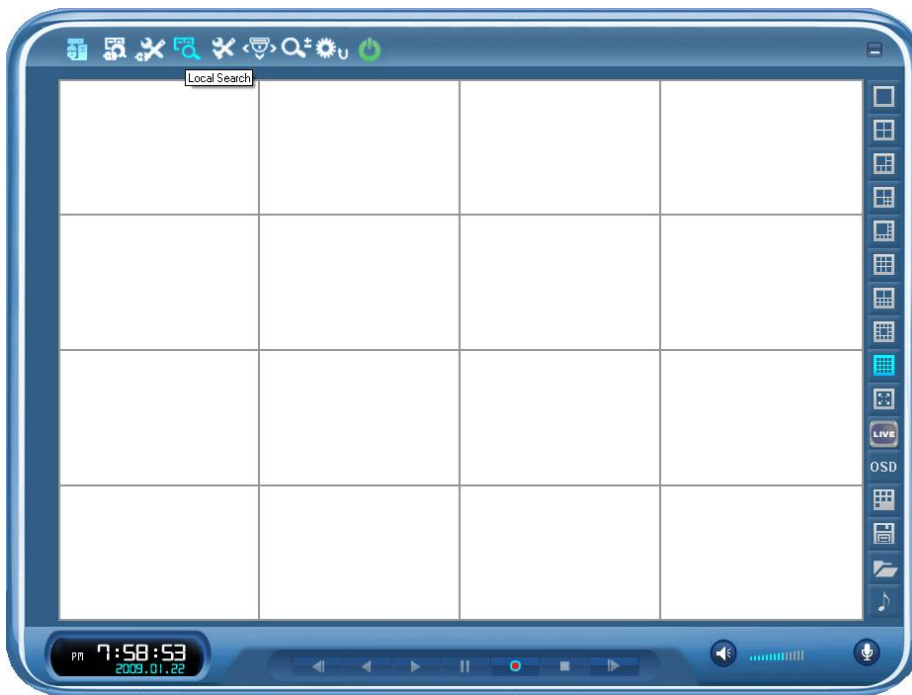
- Email / Beep / Alarm Out

The screenshot shows the 'Event' configuration window with the 'E-mail / Beep / Alarm Out' tab selected. On the left, there are buttons for 'E-mail Registration', 'E-mail Out', 'Beep Out', and 'Alarm Out'. The 'Beep Out' button is currently selected. The main area displays a table of event settings with 'Yes' and 'No' radio buttons. The 'Video loss' and 'Power Loss' events have 'Yes' selected, while 'Alarm' and 'Motion' have 'No' selected. The 'Duration' field is set to '83886080 sec'. The window has a standard title bar with 'Display', 'Recording', 'System', and 'Event' icons, and 'OK' and 'Cancel' buttons at the bottom.

Event	Yes	No
Video loss	☒	☐
Alarm	☐	☒
Motion	☐	☒
Power Loss	☒	☐

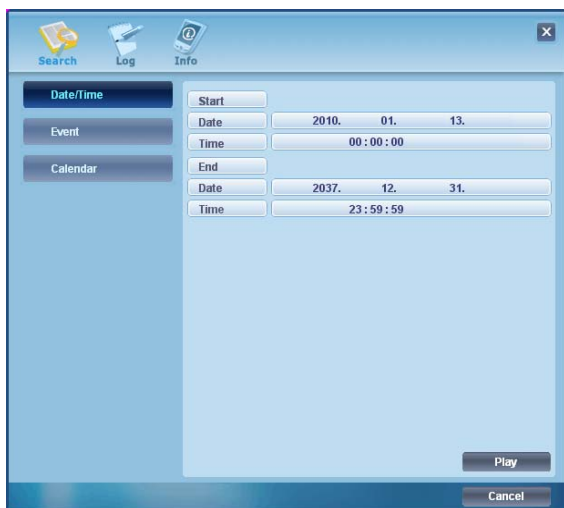
User can select each event On/Off in E-mail, Beep, Alarm out.

Local Search

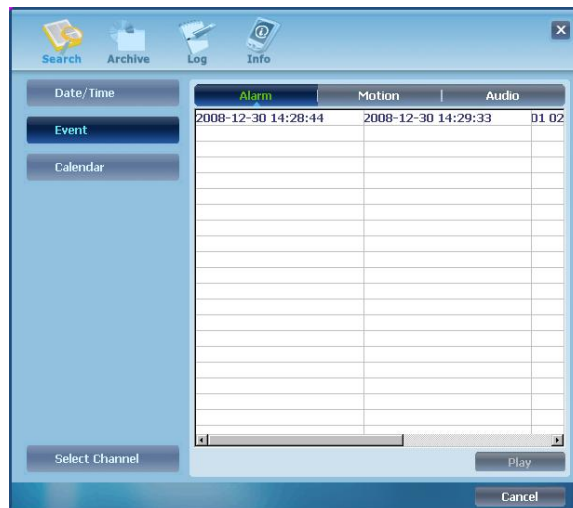


MENU : Search (Local Playback), Log(Local Log)

– Date/Time



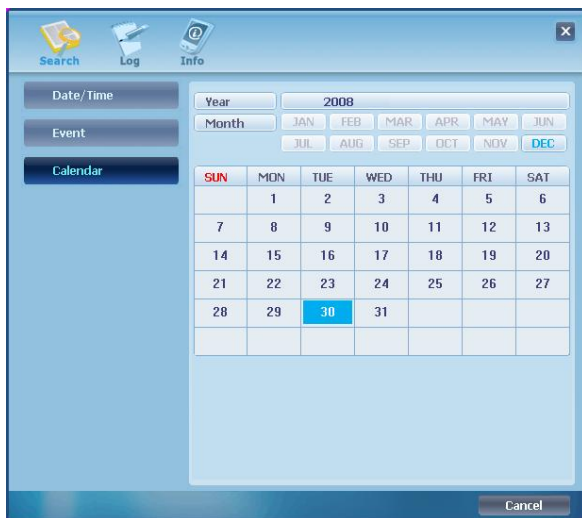
– Event



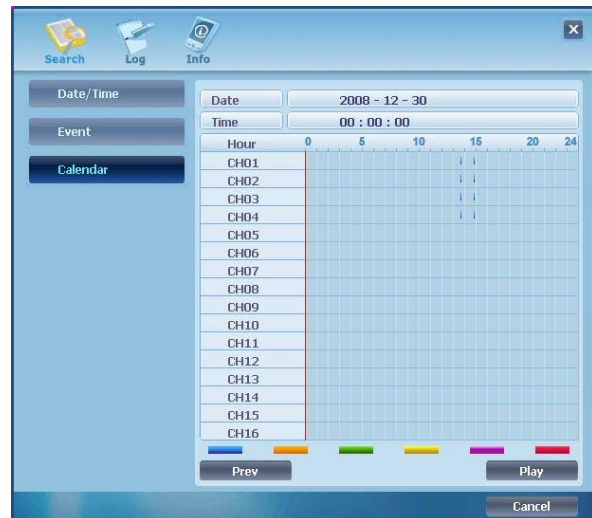
User can select specific Date and Time in order to playback with pressing the Play button.
User can select any event in order to playback with selecting one in the list of events and pressing the play button.

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– Calendar

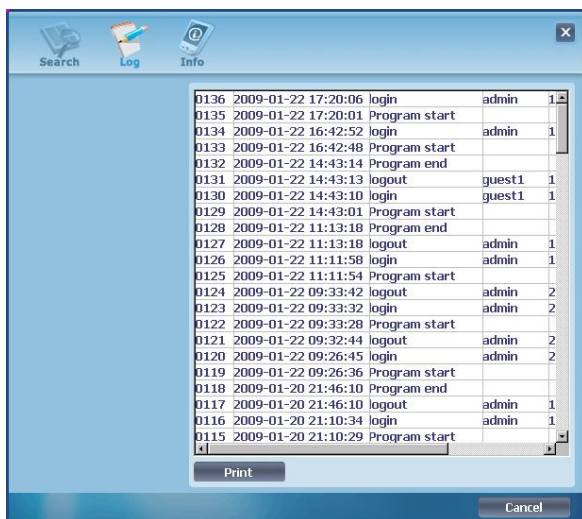


– Calendar Result

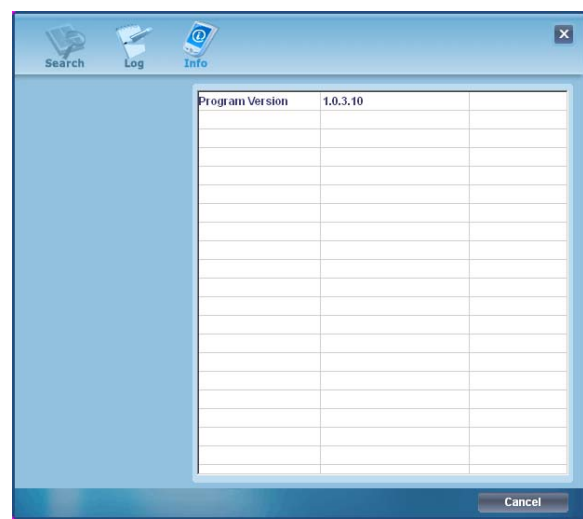


User can select recorded date, time, hour, minute and playback after pressing Play button in Calendar.

Local Log



Local Info



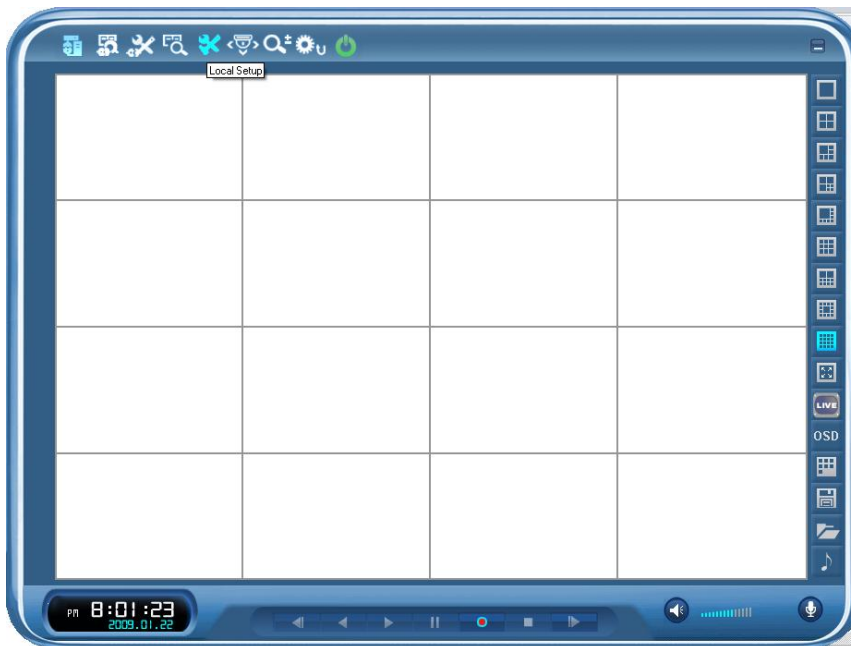
※ Local Log List

Program start, Program end / Login, Logout, Log fail / Local play start, Local play stop
Local setup, Save image

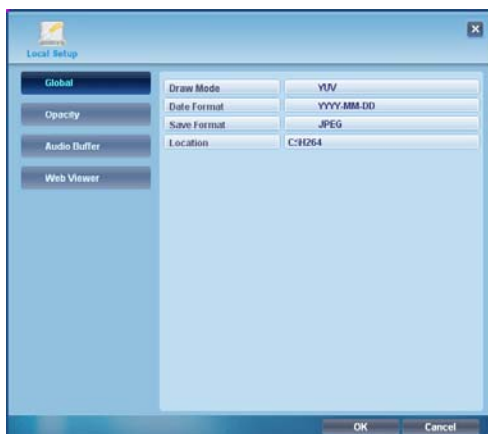
※ Local Info

It will show up current program version information

Local Setup



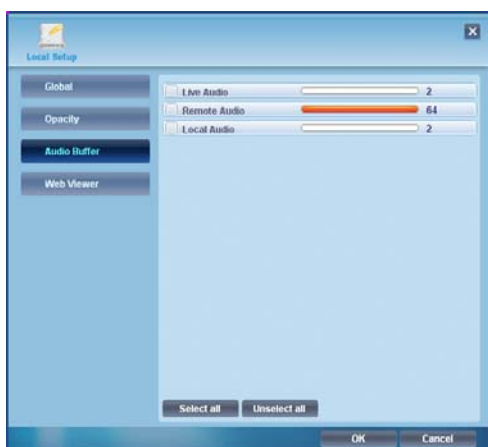
Global



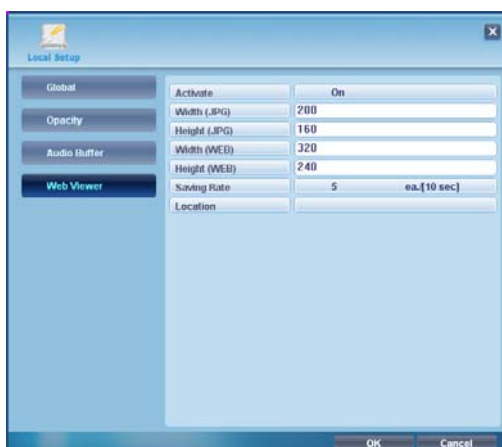
Opacity



Audio Buffer



Web Viewer



User can change & setup Global, Opacity, Audio Buffer and Web Viwer

PAN, TILT, Zoom, Focus (Remote telemetry control)



PAN/TILT/ZOOM/FOCUS



When PAN/TILT button  is clicked the Pan/Tilt control appears, this allows Left, Right, Up and Down Control of PTZ

When Zoom/Focus button  is clicked, the control changes to Zoom in on the up arrow, Zoom out on the down arrow. Focus near on the left button and focus far on the right arrow.

PRESET/LEARN



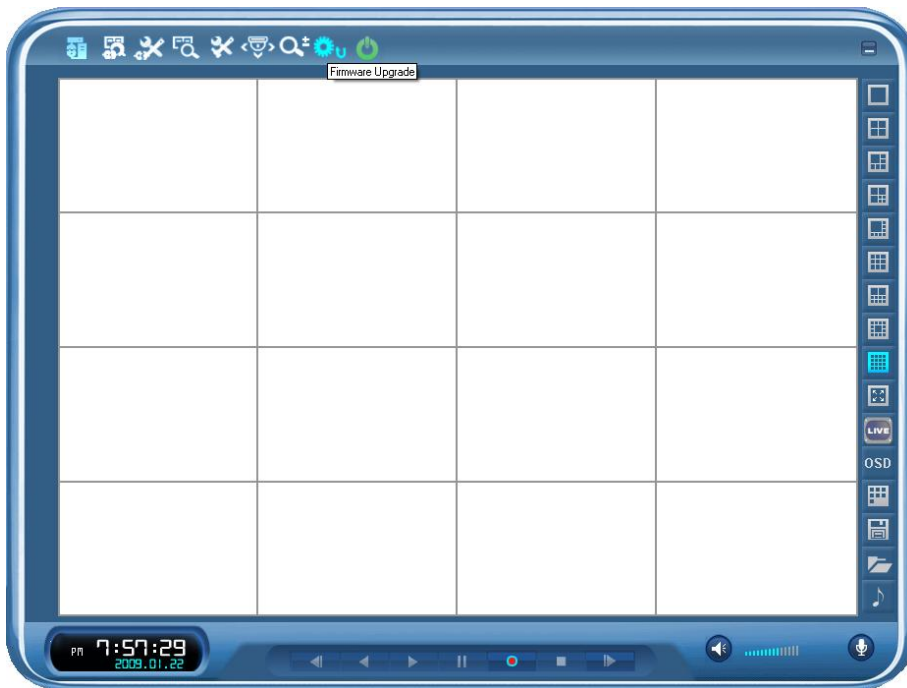
PRESET&LEARN icon

The presets button can be activated by clicking on the centre of the control icon, the preset symbol will appear and the Preset selection box will appear

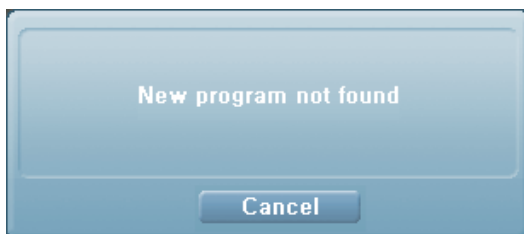
To save a preset, move the camera to the desired position then click "Set" followed by the desired number.

To recall the preset, click "Call" followed by the desired number.

Firmware Upgrade



User can select Firmware Upgrade menu, if new version exists in C:/GDVR Client/Upgrade fold, 'New program found!' and if not 'New program not found!' message will be displayed.



User can proceed upgrading after pressing OK button and select each firmware to upgrade it to the system.



User can see the display 'Firmware upgrade success!' after upgrading it successfully. User have to press OK button to reboot the DVR since the firmware will be applied completely to the system after rebooting it.

Q & A

1.

Q : The message “ Can’t display the page” is shown and failed to connect to DVR , though input the IP address or domain name on the internet explorer window.

A : 1) DVR is out of work or 2) a problem on the network connection. Please check the DVR is working properly and , if it does, check the connection both DVR and PC .

2.

Q : Can’t download the ActiveX Control.

A : It does if “Windows XP Service Pack 2” is installed on the PC. Remove “service pack 2” on the menu , “program add & removal” on the control panel. Or, refer to Appendix 3.

3.

Q : The client program is terminated with the message “Unsupported OS version !”

A : The client program is working on the Window XP , 2000. Doesn’t support Win.98, 98SE, ME.

4.

Q : Log-In box repeats appearing

A : It appears repeatedly when Client ID & Password is input wrong. Please check the exact ID & PW memorized on the DVR.

5

.Q : Can’t change “Draw mode” on the menu, Local setup.

A : It doesn’t allow the change during the live monitoring and playback. If it required, please stop the live monitoring or playback. Then, you can change the “Draw mode”.

6.

Q : Where is the saved file located ?

A : It locates at “C:\GDVR Client\Saved”. The file can be played with Image viewer.

7.

Q : There is no response after pushing the OSD button.

A : OSD is showing several status during playback. If the detail items is not specified on the “Local Setup”, there is no response even if pushing the OSD button during playback. Try it after selecting required OSD menu on the Local Set-up .

8.

Q : Client program(internet explorer) was disappeared when I have entered new several web site.

A : Since some web site is possible to remove the existing explorer , please disable “ ☐ re-use the window in executing shortcut” under “ Tools-> Internet Option-> advance(advance is located under “Search”.

9.

Q : I can see the display web layout on the monitor but no picture.

A1 : Please check your PC specification needs to be Pentium III 750MHz and Graphic Memory 32M Over.

A2 : Please, go to control panel -> internet options -> security -> select Customer Level.

Go to ActiveX controls and plug-ins -> Automatic prompting for ActiveX Controls => Disable"

Go to Download unsigned ActiveX controls => Prompt"

Go to Miscellaneous -> Allow script-initiated windows without size or position constraints" => Enable"

Appendix 1

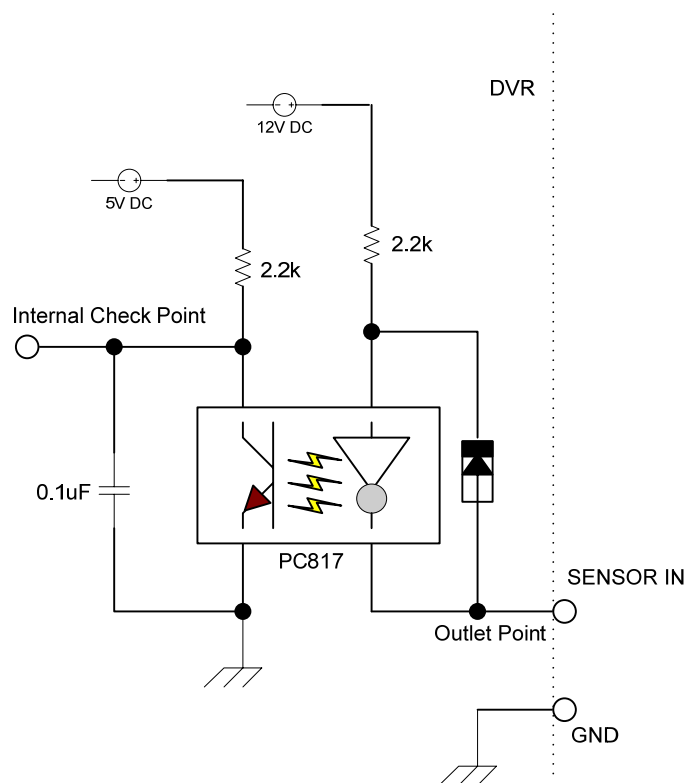
SENSOR INSTALLATION

1. Components

- 1) External Sensor : 1 (You should prepare one set)
- 2) DVR System : 1

2. Inner Circuit for Sensor Input

The inner circuit of Mpeg 4 DVR is as follows,



- ① PC817 : Photo Coupler
- ② The Specification of PC817

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■ Absolute Maximum Ratings

Parameter		Symbol	Rating	Unit
Input	Forward current	IF	50	mA
	*1Peak forward current	I FM	1	A
	Reverse voltage	V R	6	V
	Power dissipation	P	70	mW
Output	Collector-emitter voltage	V CEO	35	V
	Emitter-collector voltage	V ECO	6	V
	Collector current	IC	50	mA
	Collector power dissipation	P C	150	mW
Total power dissipation		P tot	200	mW
*2Isolation voltage		V iso	5 000	V rms
Operating temperature		T opr	-30 to + 100	°C
Storage temperature		T stg	-55 to + 125	°C
*3Soldering temperature		T sol	260	°C

*1 Pulse width≤100 s, Duty ratio : 0.001

*2 40 to 60% RH, AC for 1 minute

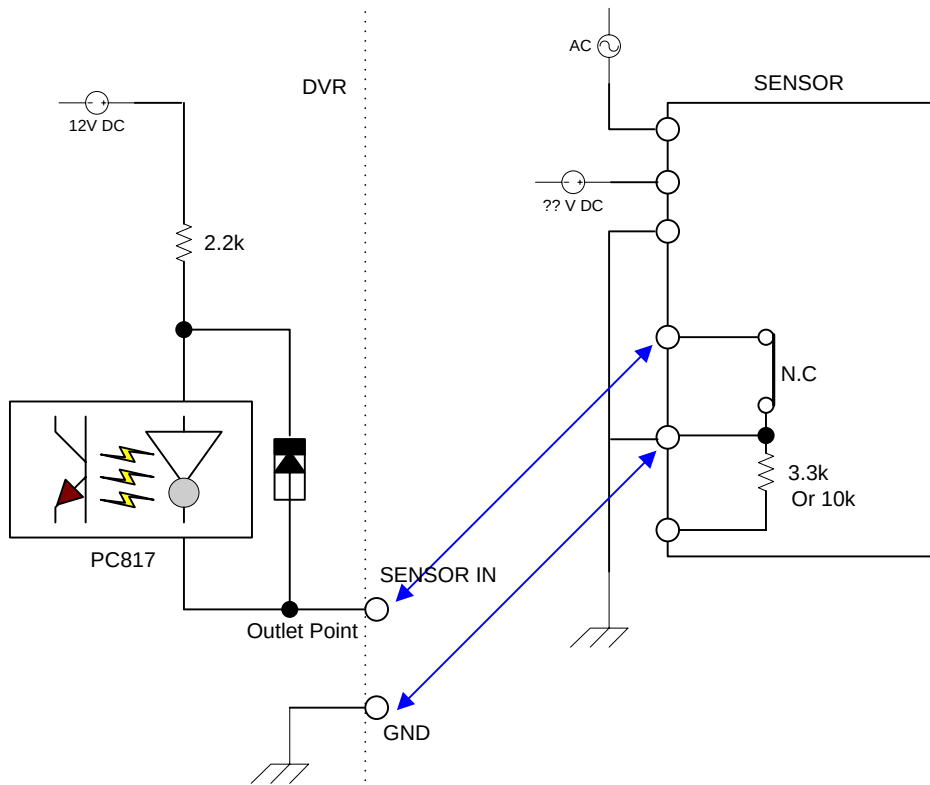
*3 For 10 seconds

■ Electro-optical Characteristics

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V F	IF = 20mA	-	1.2	1.4	V
	Peak forward voltage	V FM	IFM = 0.5A	-	-	3.0	V
	Reverse current	IR	V R =4V	-	-	10	μ A
	Terminal capacitance	Ct	V = 0, f = 1kHz	-	30	250	pF
Output	Collector dark current	ICEO	V CE = 20V	-	-	10 -7	A
Transfer characteristics	*4Current transfer ratio	CTR	IF = 5mA, V CE = 5V	50	-	600	%
	Collector-emitter saturation voltage	V CE(sat)	IF = 20mA, I C = 1mA	-	0.1	0.2	V
	Isolation resistance	R ISO	DC500V, 40 to 60% RH	5 x 10 ¹⁰	10 ¹¹	-	Ω
	Floating capacitance	Cf	V = 0, f = 1MHz	-	0.6	1.0	pF
	Cut-off frequency	fc	V CE = 5V, I C = 2mA, R L = 100 Ω, -3dB	-	80	-	kHz
	Response time	Rise time t r	V CE = 2V, I C = 2mA, R L = 100 Ω	-	4	18	μ s
		Fall time t f		-	3	18	μ s

3. SENSOR Install Processing

- ① Please refer the below block diagram.

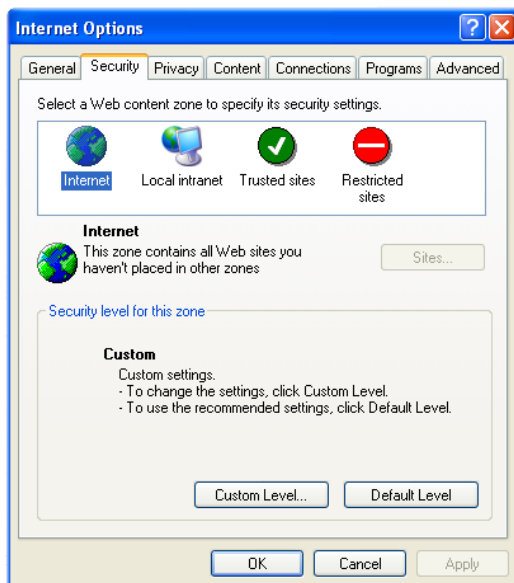


Appendix 2

INSTALLING GRYPES WEB CLIENT ON WINDOW XP/2000 & WINDOW VISTA SERVICE PACK 2.

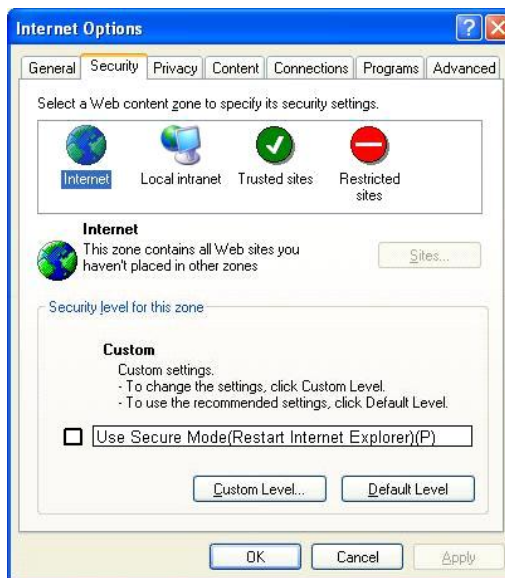
1) Security Setup

> Window XP / 2000



Tools-> Internet Options-> Security
-> Select "Customer Level"

> Window Vista

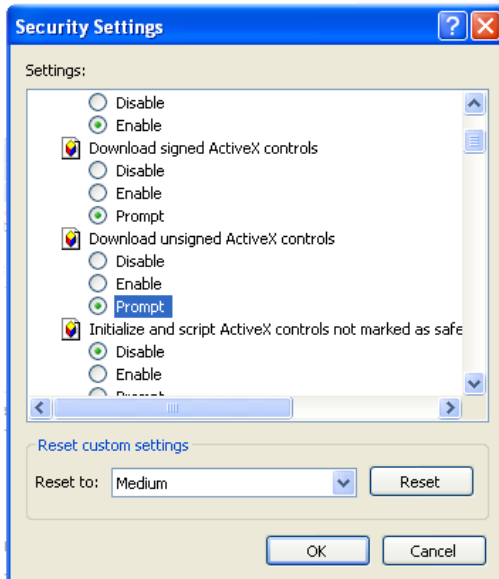


Tools-> Internet Options-> Security
-> Unselect square box ->
Select "Customer Level"

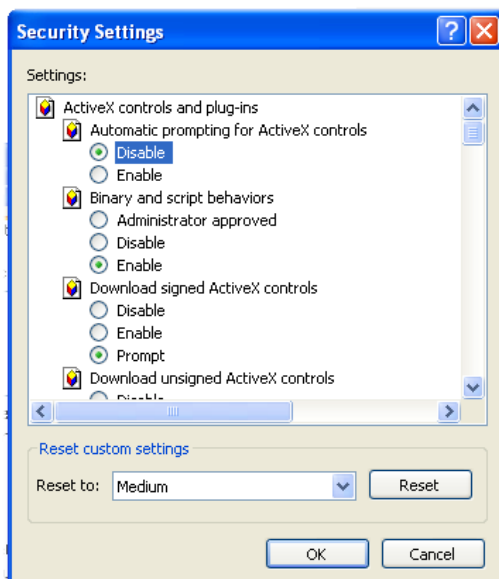


Select " Allow script-initiated windows
without Size or position constraints"
-> Enable.

H.264 DVR - Installation/ Operation Manual



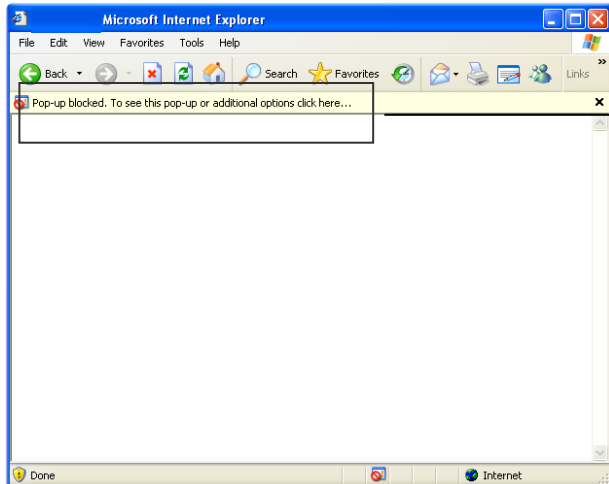
Select “Download unsigned Active X controls”-> Prompt



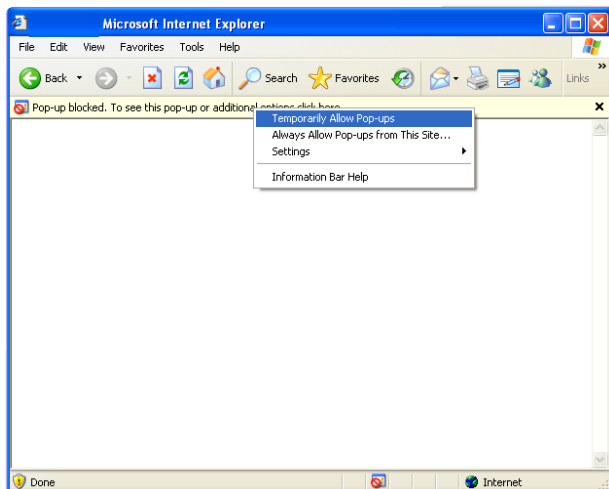
Select “Automatic Prompting for Active X controls”-> Disable

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2) Connection



Click here as described

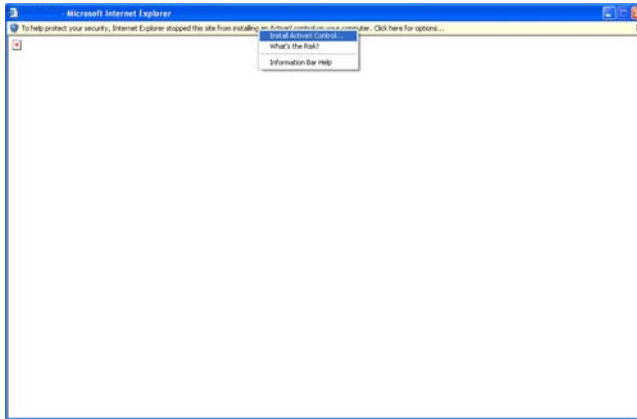


Select “ Temporary Allow Pop-ups”

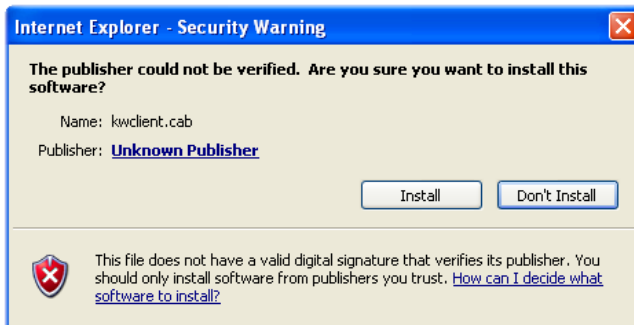


Click “ To help protect security, Internet Explorer stopped this site from installing an Active X control on your computer. Click here for options...”

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Select "Install Active X Control "

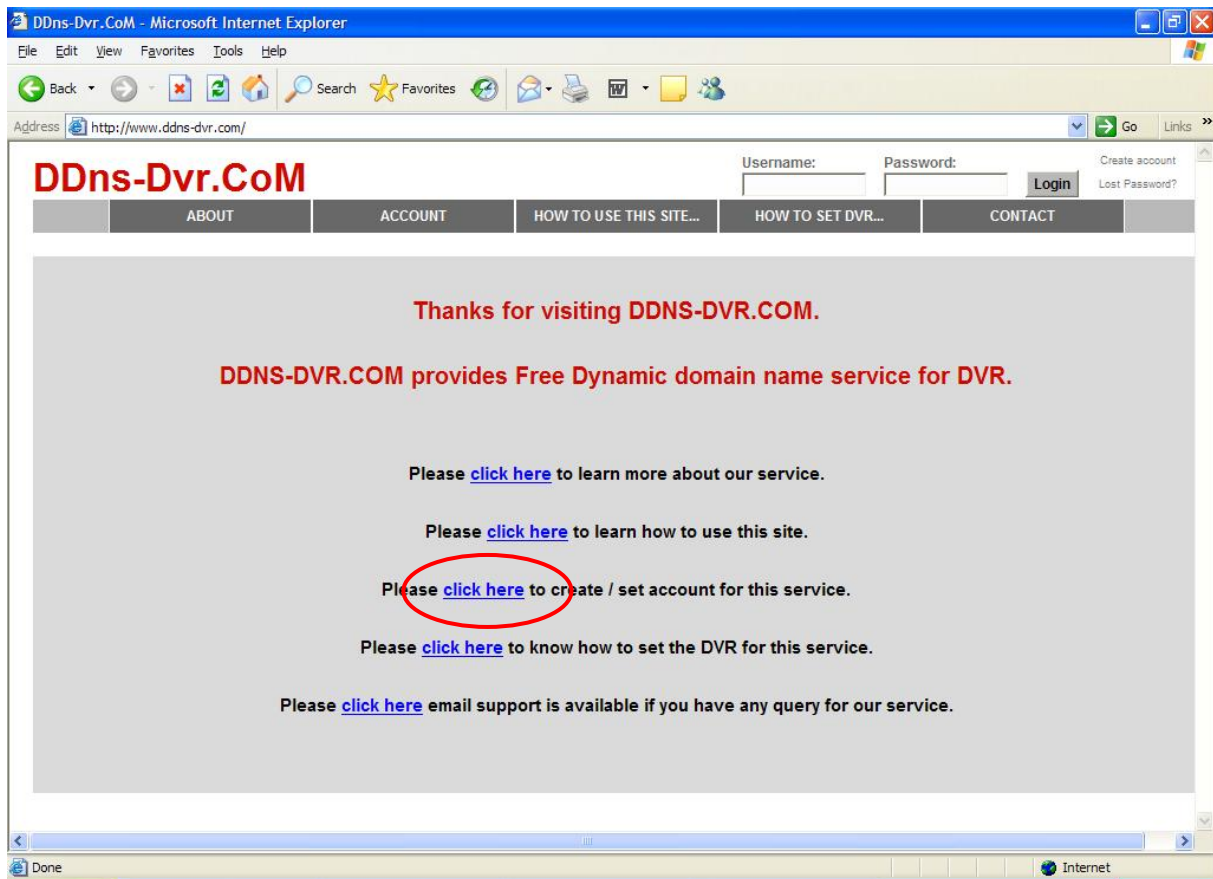


Select "Install" and then 'Log-In' box will be shown.

Appendix 3

DYNAMIC IP (Supporting DDNS Server)

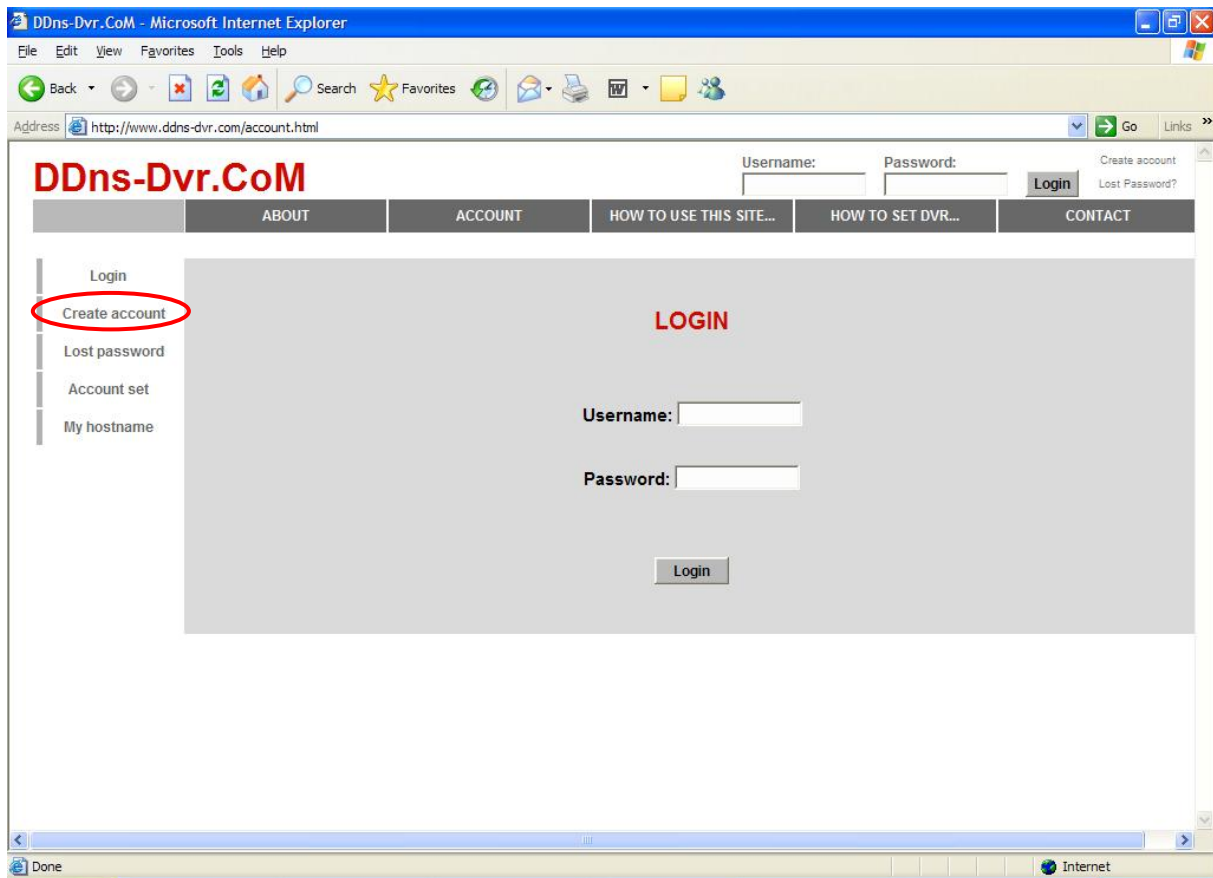
1. visit www.ddns-dvr.com to get the DDNS user ID & PW as well as Host name.



2. Click to create / set account of “Dynamic DNS”.

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3. Select “Create Account” menu.



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4. Create Account.

DDns-Dvr.CoM - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://www.ddns-dvr.com/create_account.php

DDns-Dvr.CoM

Username: Password: Login Create account Lost Password?

ABOUT ACCOUNT HOW TO USE THIS SITE... HOW TO SET DVR... CONTACT

Login
Create account
Lost password
Account set
My hostname

CREATE ACCOUNT

Username : Check ID

Password :

E - mail :

Hostname : .DDns-Dvr.CoM

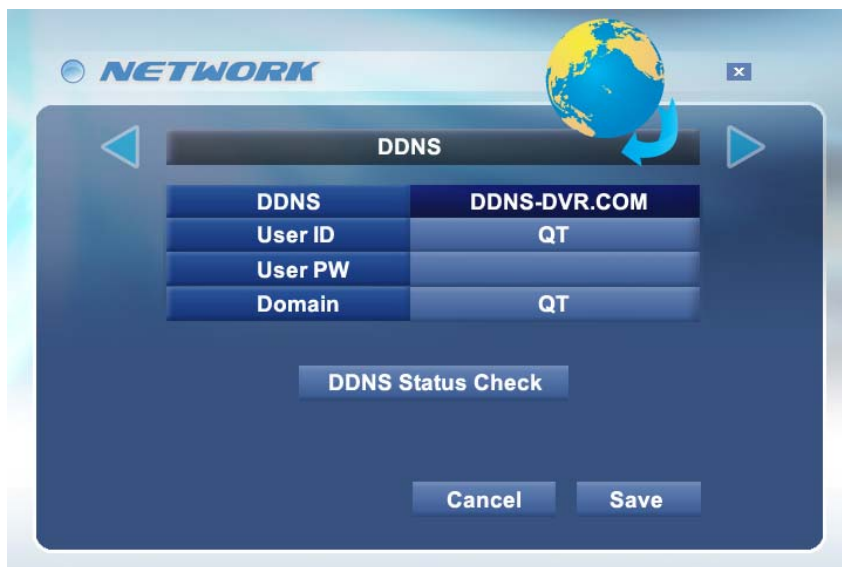
IP Address : 203.229.230.243

Create Backward

Please set up all blank in order to create new account.
ID & Password will be emailed you when the account is created well.

Appendix 4

> DDNS SET



To enter Network set menu, system ask password (Default is 00000000).

In DDNS environment, need to be changed DVR & Web server port, please refer to IP set.

With DDNS Server, User can connect private fixed IP over Lan under router(Please register your ID & Domain at www.ddns-dvr.com in which you can use DDNS server as free of charge)

Please refer to Appendix 3

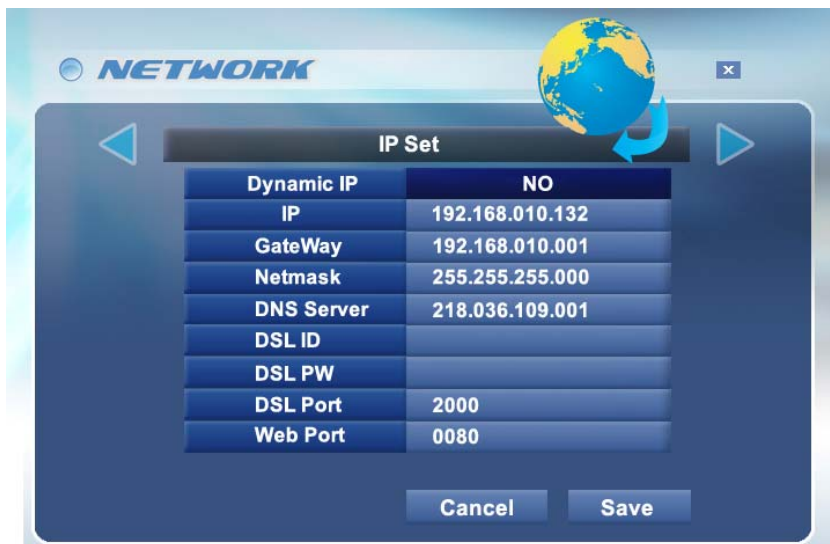
* Set up DDNS

Change DDNS to ON -> Input User ID -> Input User PW -> Input Domain

-> Click "DDNS Status Check" -> if it is "ok" -> Click "Apply"

> Note ; In DDNS Set, User have to type Domain Name "QT"

SETUP FOR DVR PORT/ WEB SERVER PORT USING IP SHARING ROUTER



1) To use IP sharing Router, it should be “NO” at “Use Dynamic IP”.

- DVR Port : It is possible to be input any numbers from 2000 to 65535.

- Web Server Port : It is possible to be input any numbers without overlapping with DVR Port (2000~65535).

2) Setup “virtual server” on IP sharing Router

It is for setting virtual server to forward IP which is allowed to DVR.

> For example,

DVR-1, IP : 192.168.10.132, DVR Port : 2000, Web Server Port : 2001

If DVR-1 is configured as above, the virtual server on IP sharing router is as follows.

1) PC Server Name : DVR-1(IP 192.168.10.132)

Protocol : TCP, Internal Port : 2000, External Port : 2000

2) PC Server Name : DVR-1 (IP 192.168.10.132)

Protocol : TCP, Internal Port : 2001, External Port : 2001

* For more detail, please refer to relevant IP sharing manual .

(3) ‘DDNS’ Setup on IP sharing router

DDNS configuration is no needed in case of fixed IP.

(4) To connect DVR-1 with Internet Explorer, <http://QT.ddns-dvr.com:2001>,

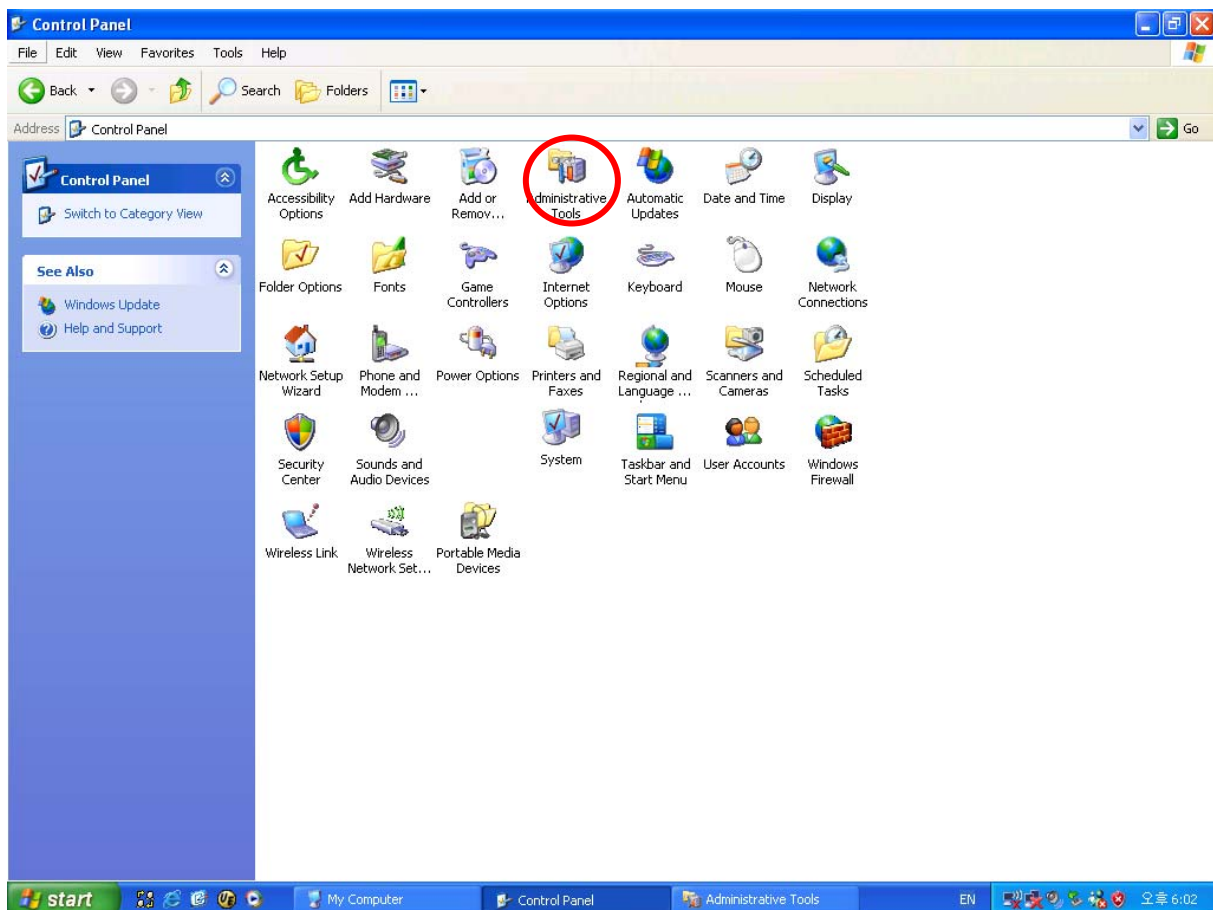
to connect DVR-1 with CD installer, “QT.ddns-dvr.com.”

Appendix 5

MAKING PARTITION ON EXTERNAL USB HDD

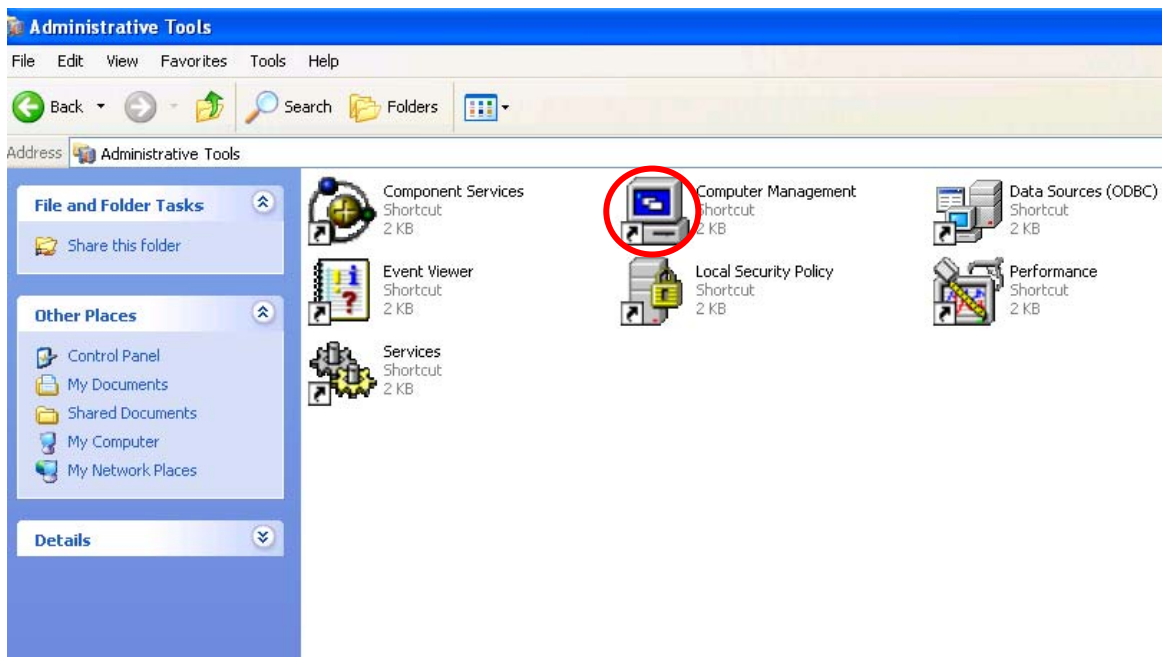
To back up to USB HDD, the USB HDD should be formatted first on PC. We are supporting FAT32 file system of which maximum size is 80GB at one partition. Please refer to the following procedure to make a partition and format on PC.

1. Select Control panel-> administrative Tools.

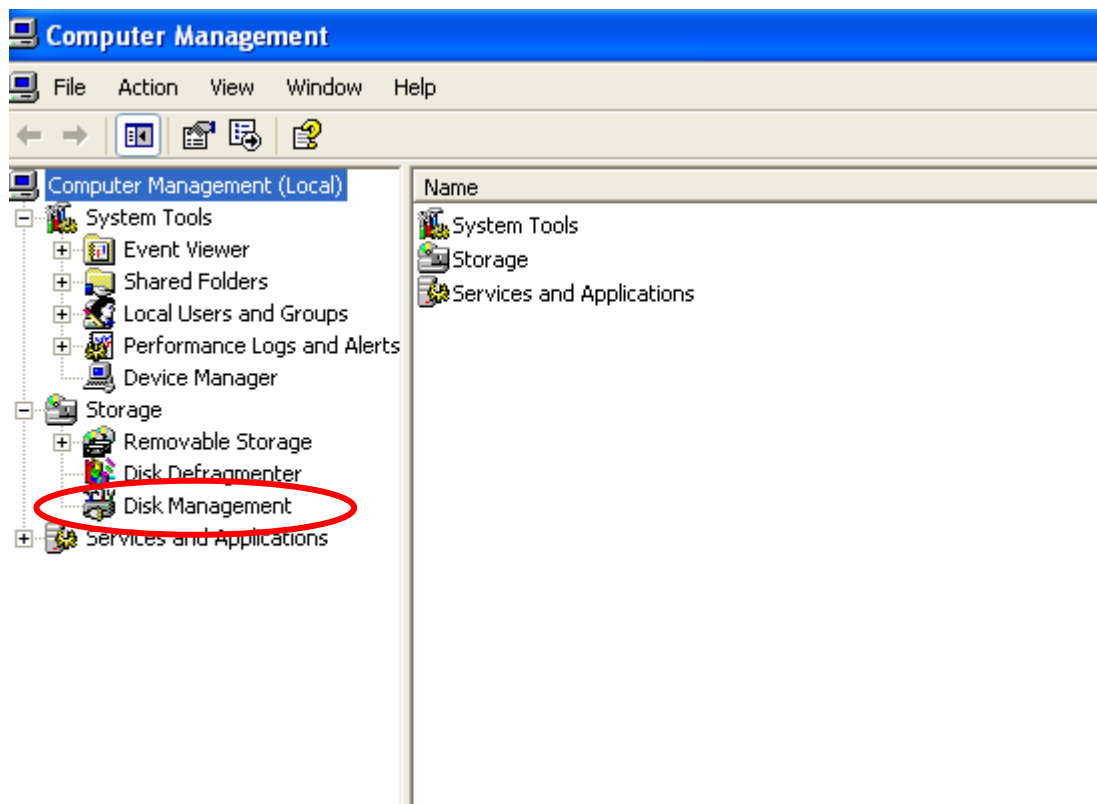


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2. Select “Computer Management”

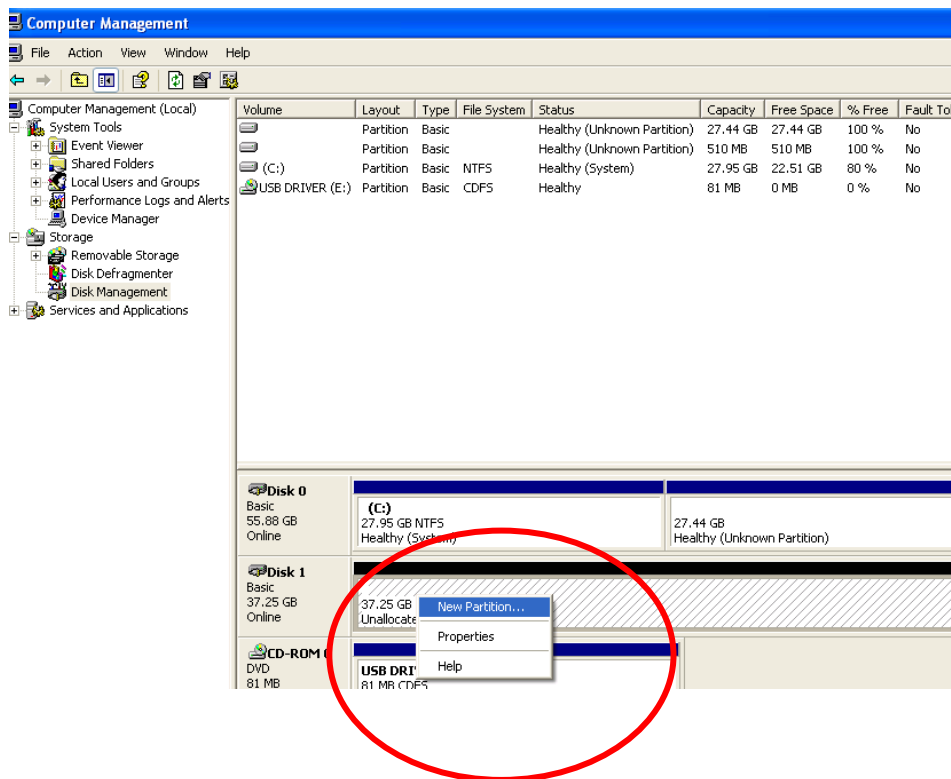


3. Select “Disk Management”.

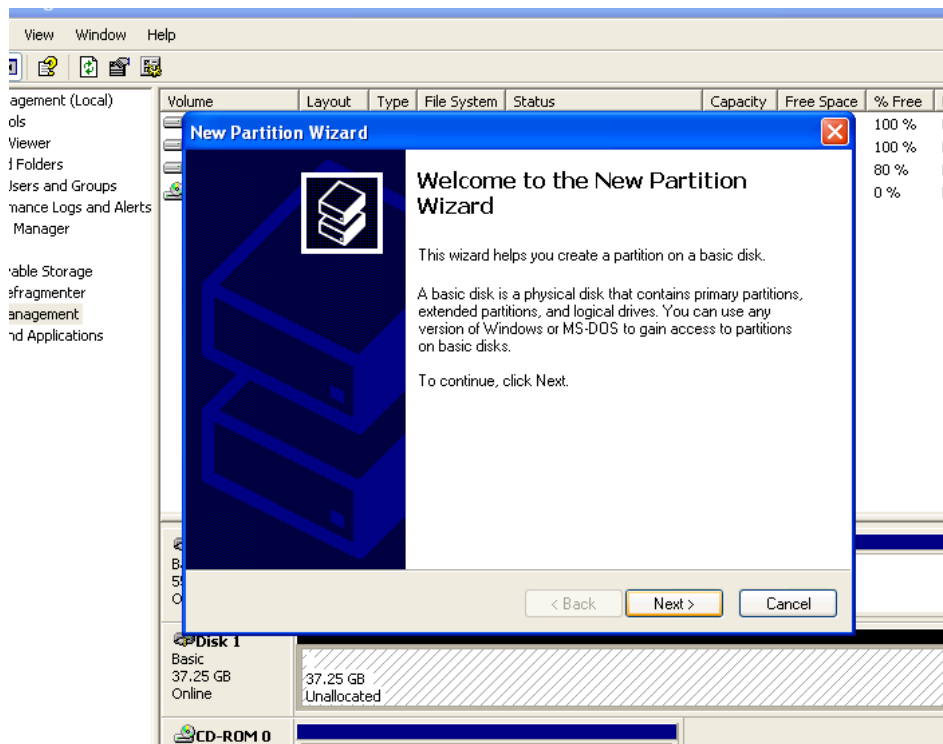


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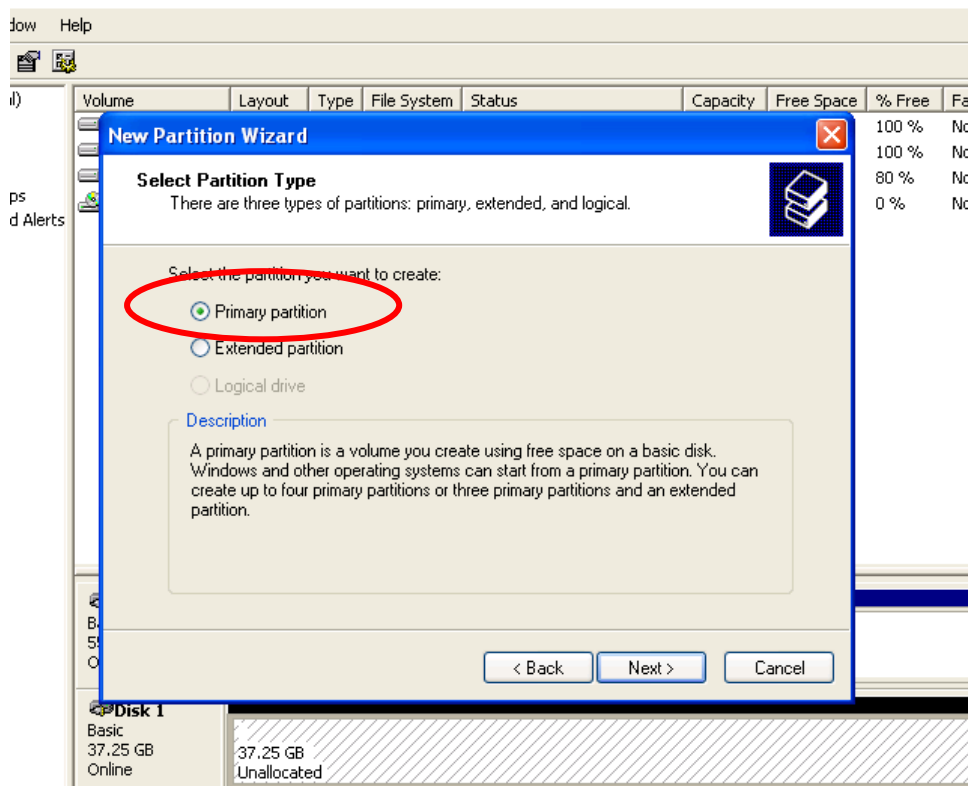
4. Click right mouse button and select “New Partition”.



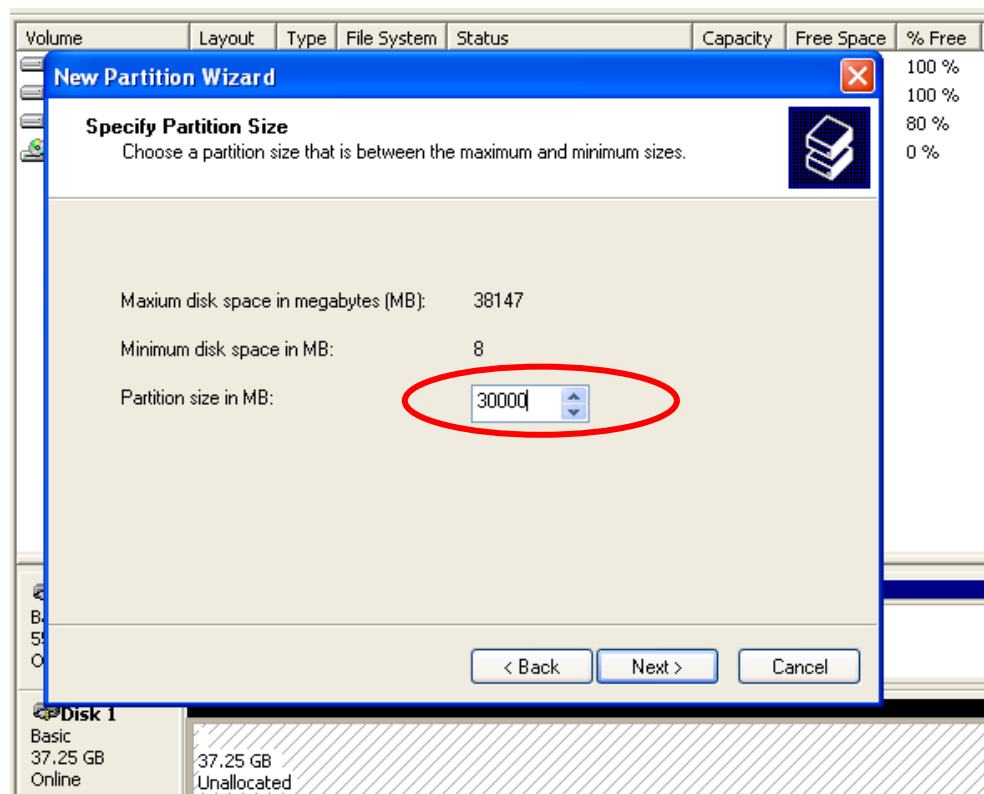
5. Follow “New Partition Wizard” procedure as below.



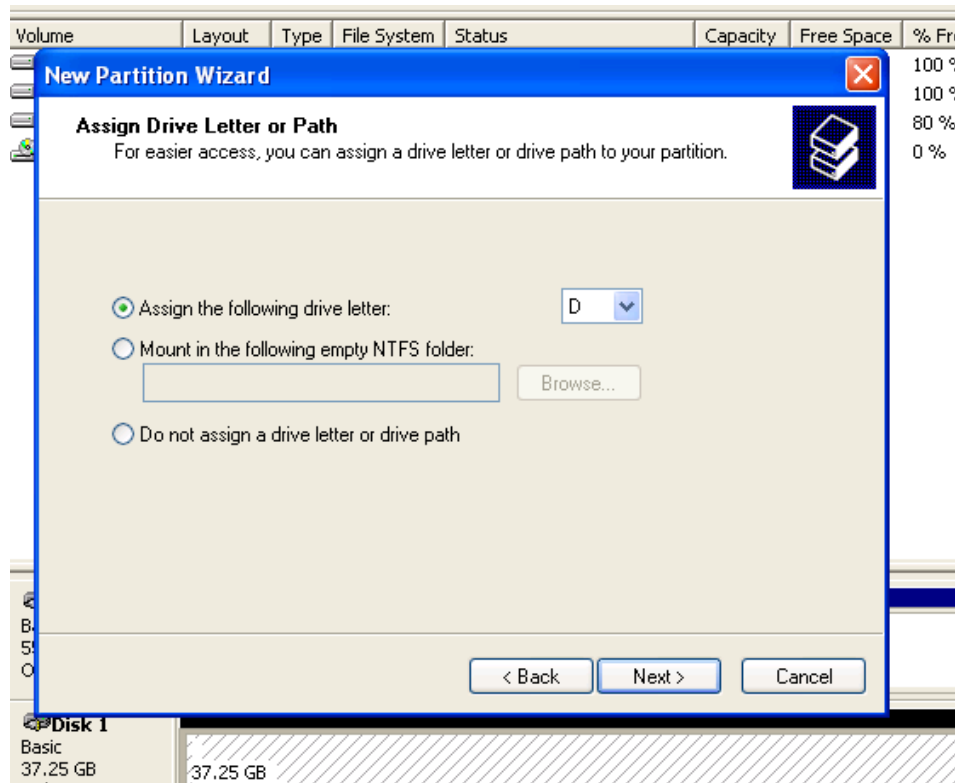
6.



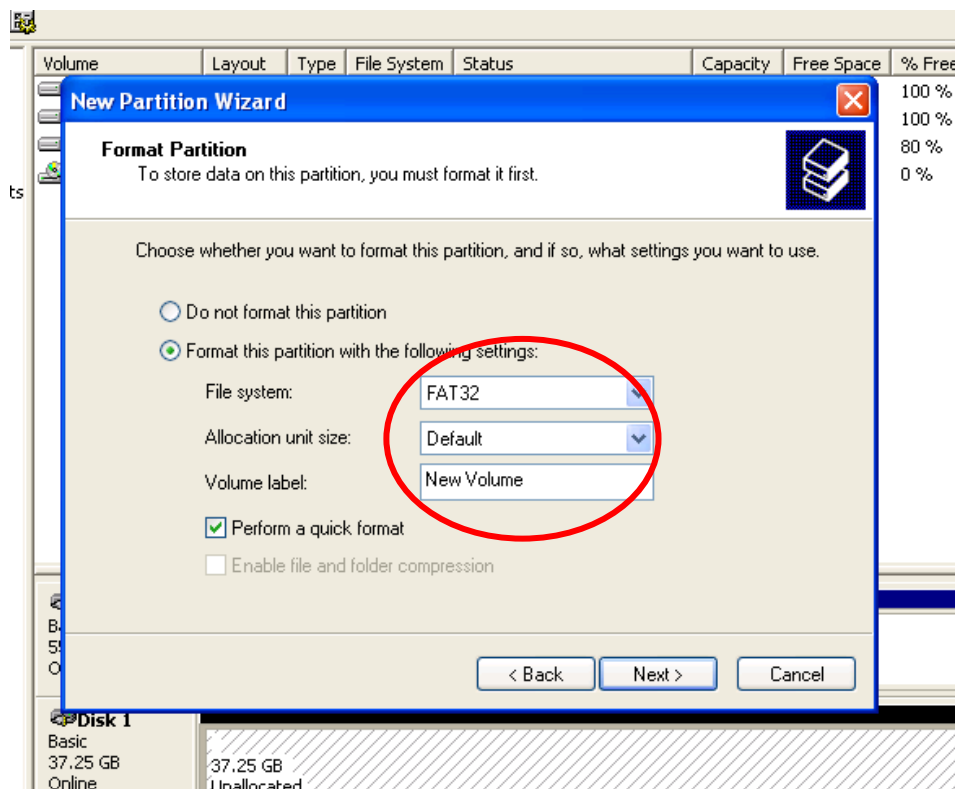
7. Maximum is 30GB at FAT32 file format.



8.

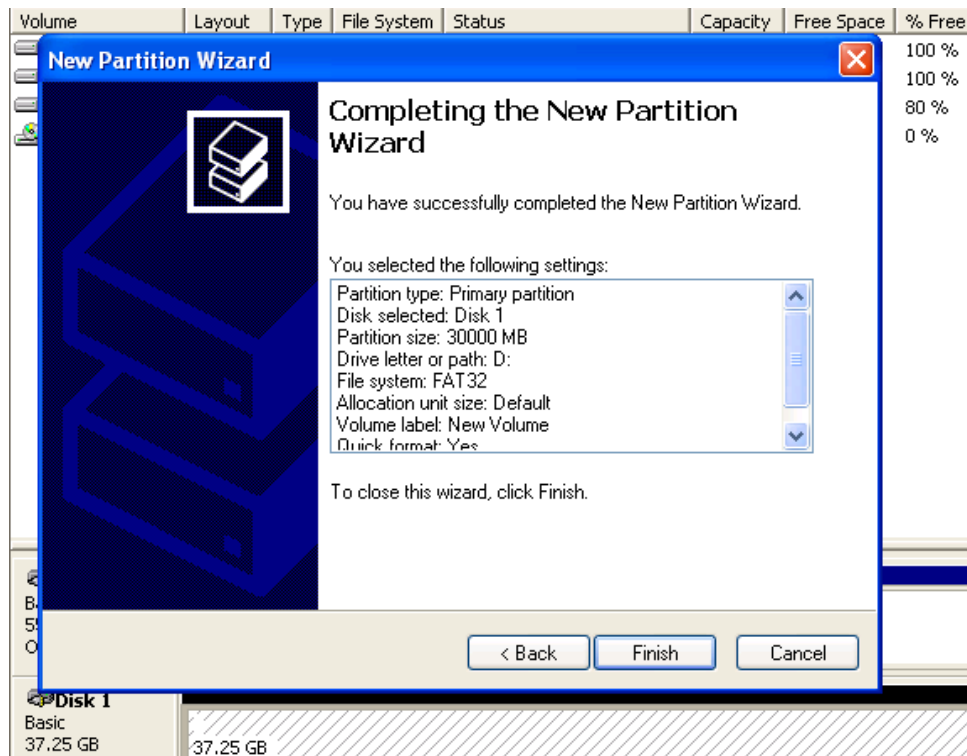


9.

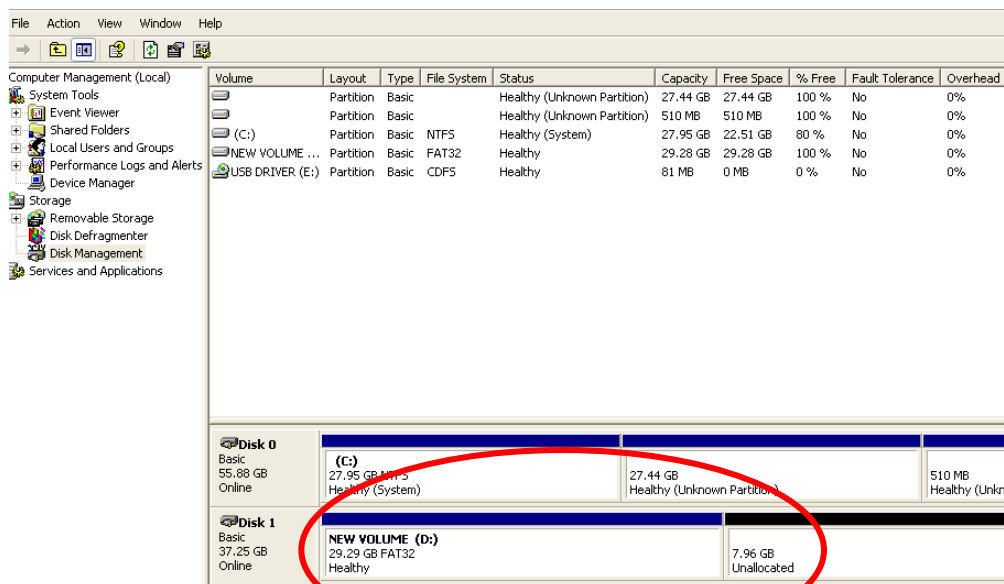


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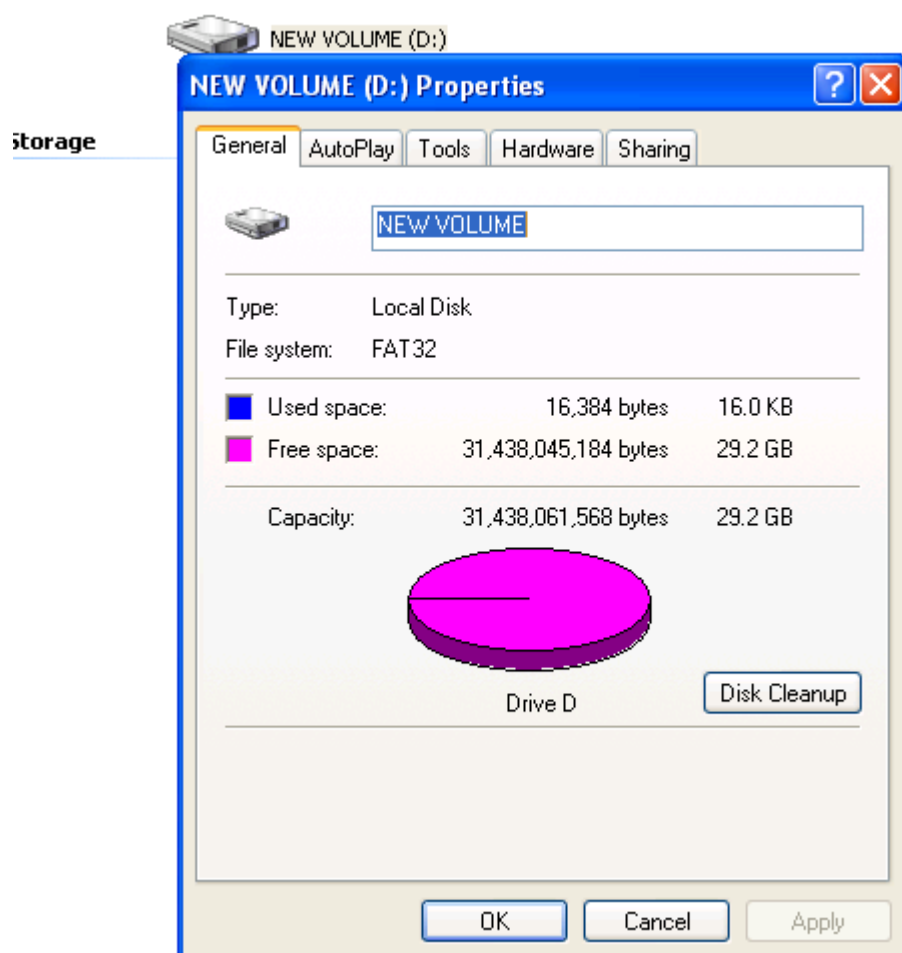
10. At this stage, New Partition has been made.



11. Check New partition was created correctly. (Format will be executed automatically)



12. Check New Partition was created correctly



Appendix 6

Mobile Phone Viewing

*Web Viewer with SARARI Browser on Iphone

Please set the JAVA Script in order to run the web viewer through SAFARI browser on Iphone.

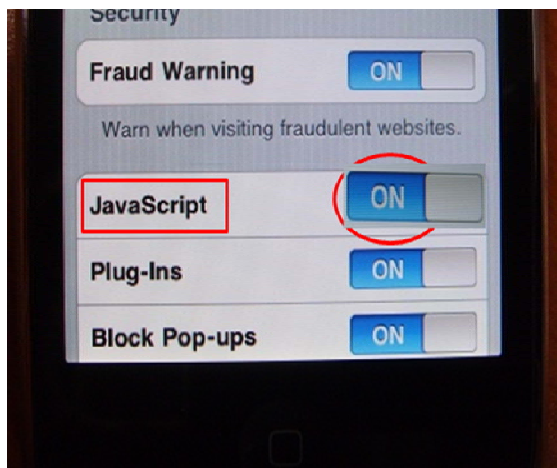
1.Please click the setting on the menu.



2.Choose Safari menu from the setting list.



3.Please set Java Script to ON.



4.Click the Safari Browser Icon



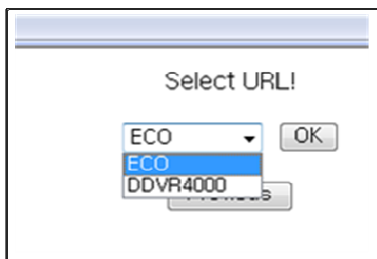
5.Please go to IP [<http://dvr.ddns-dvr.com:1000/mobile>]

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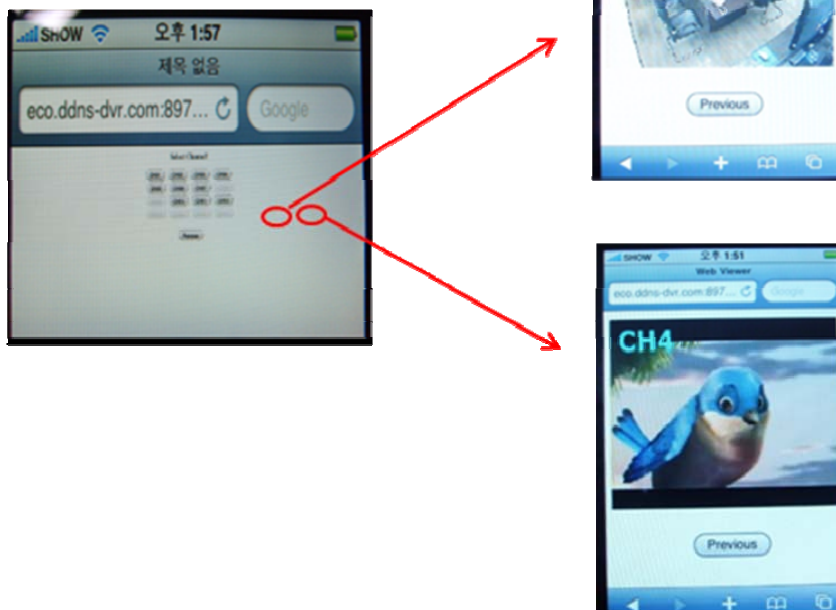
6. Please input Password [xxxx] and click [OK]



7. Please choose one of the DVR on the Menu and click [OK]



8. Please choose one of the channel which is activated.



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Appendix 7

SPECIFICATION

Model				Non-DVD Series H.264 (120/100 FPS Recording)					
				4CH DVR		8CH DVR		16CH DVR	
Video	Camera Input(NTSC,PAL)			4		8		16	
	Output			1BNC, 1VGA, 1SPOT					
Audio	Audio Input / Output (RCA)			1/1		1/1		1/1	
Sensor in (No,Nc) / Alarm Out				1/1		1/1		1/1	
Operating System				Embeded Linux OS					
Display	Speed			120fps		240fps		480fps	
	Resolution(Pixel)			720*480 (NTSC) / 720*576 (PAL)					
	Split Screen			1,4		1,4,8		1,4,8,16	
Recording	Compression			H.264					
	Resolution(Pixel)			720*480, 720*240, 360*240 (NTSC) / 720*576, 720*288, 360*288 (PAL)					
	Picture Quality			3 Steps (High, Middle, Low)					
	Mode			Normal, Motion, Alarm, Schedule, Duration					
	Priority			Alarm -> Motion -> Normal					
	Speed	Total	NTSC	30fps(720x480),60fps(720x240) 120fps(360x240)		30fps(720x480),60fps(720x240) 120fps(360x240)		30fps(720x480),60fps(720x240) 120fps(360x240)	
			PAL	25fps(720x480),50fps(720x240) 100fps(360x240)		25fps(720x480),50fps(720x240) 100fps(360x240)		25fps(720x480),50fps(720x240) 100fps(360x240)	
		Each Channel	NTSC	7fps(720x480),15fs(720x240) 30fps(360x240)		3fps(720x480),7fs(720x240) 15fps(360x240)		1fps(720x480),3fps(720x240) 7fps(360x240)	
			PAL	6fps(720x480),12fs(720x240) 25fps(360x240)		3fps(720x480),6fs(720x240) 12fps(360x240)		1fps(720x480),3fs(720x240) 6fps(360x240)	
	Water Marking & Scrambling			Our Own Algorithm					
Playback	Display			1,4		1,4,8		1,4,8,16	
	Search Mode			Date & Time, Calendar, Event(Alarm, Motion, Audio)					
	Speed			Normal, REW(*1,*2,*4,*16) & FF(*1,*2,*4,*16), Frame to Frame, Pause					
	Device			Internal HDD					
	Still Image Capture & Save			JPEG, BMP Compression or Exclusive Fromat & USB I/F Device(Memory Stick)					
Network	Network Interface			Ethernet					
	Protocol			TCP/IP, SMTP, HTTP, DHCP, PPPOE(ADSL)					
	Serial Communicaton			RS-232 1EA, RS-485 1EA(PTZ & Keyboard control)					
	Application			Windows 2000 / XP(PC Client System) / Windows Vista					
	Web Browser			Internet Explorer 5.0 Higher(DVRs Contorl or Viewing)					
	Event Transport			E-mail notification when Event Occurs					
	Viewing			Remote Client, Internet Explorer, CMS					
Archive	Interface			USB 2.0x1ea, USB for PS2 Mousex1ea					
	Archive Device			External HDD, CD&DVD-RW, Network, Memory Stick					
Control	Motion Detection			Each Control / Channel					
				Sensitivity : 3 Steps for each channel					
				Area : Programmable motion detection area for each camera individually					
	Alarm Hold Time			5~240 SEC					
	Event Log			Up to the 256 events(Alarm,Motion,Video&Power Loss,Power&Record On/Off)					
	Controller			IR Remote Control/ Mouse					
	Pan/Tilt Camera			Control From RS485 Interface					
Others	HDD			Max.1HDD Up to 2TB					
	Power Source			DC 12V/3A					
	Power Consumption			36W					
	Operating Temperature			5~40℃ (41~104F)					
	Relative Humidity			Maxium 80% Non-Considering					
	Weight	Net		3.0Kg					
		Gross(Box)		5.0Kg					
	Dimension	Net		355(W)*245(D)*60(H)mm					
		Gross(Box)		400(W)*340(D)*142(H)mm					

Design and product specifications subject to change without notice

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SPECIFICATION

Model			DVD Series H.264 (120/100 FPS Recording)			
			4CH DVR	8CH DVR	16CH DVR	
Video	Camera Input(NTSC,PAL)		4	8	16	
	Output		1BNC, 1VGA, 1SPOT			
Audio	Audio Input		1 RCA	1 RCA	1 RCA	
	Output		1 RCA			
Sensor in (No,Nc)/ Alarm Out			1/1	1/1	1/1	
Operating System			Embedded Linux OS			
Display	Speed		120fps	240fps	480fps	
	Resolution(Pixel)		720*480 (NTSC) / 720*576 (PAL)			
	Split Screen		1,4	1,4,8	1,4,8,16	
Recording	Compression		H.264			
	Resolution(Pixel)		720*480, 720*240, 360*240 (NTSC) / 720*576, 720*288, 360*288 (PAL)			
	Picture Quality		3 Steps (High, Middle, Low)			
	Mode		Normal, Motion, Alarm, Schedule, Duration			
	Priority		Alarm -> Motion -> Normal			
	Speed	Total	NTSC	30fps(720x480),60fps(720x240) 120fps(360x240)	30fps(720x480),60fps(720x240) 120fps(360x240)	30fps(720x480),60fps(720x240) 120fps(360x240)
			PAL	25fps(720x480),50fps(720x240) 100fps(360x240)	25fps(720x480),50fps(720x240) 100fps(360x240)	25fps(720x480),50fps(720x240) 100fps(360x240)
		Each Chanel	NTSC	7fps(720x480),15fs(720x240), 30fps(360x240)	3fps(720x480),7fs(720x240), 15fps(360x240)	1fps(720x480),3fps(720x240) 7fps(360x240)
			PAL	6fps(720x480),12fs(720x240), 25fps(360x240)	3fps(720x480),6fs(720x240), 12fps(360x240)	1fps(720x480),3fs(720x240), 6fps(360x240)
	Water Marking & Scrambling			Our Own Algorithm		
Playback	Display		1,4	1,4,8	1,4,8,16	
	Search Mode		Date & Time, Calendar, Event(Alarm, Motion, Audio)			
	Speed		Normal, REW(*1,2,4,16) & FF(*1,*2,*4,*16,). Frame to Frame, Pause			
	Device		Internal HDD			
	Still Image Capture & Save		JPEG, BMP Compression or Exclusive Fromat & USB I/F Device(Memory Stick)			
Network	Network Interface		Ethernet			
	Protocol		TCP/IP, SMTP, HTTP, DHCP, PPPOE(ADSL)			
	Serial Communicaton		RS-232 1each, RS-485 1ea(PTZ & Keyboard control)			
	Application		Windows 2000 / XP(PC Client System) / Windows Vista			
	Web Browser		Internet Explorer 5.0 Higher(DVRs Contorl or Viewing)			
	Event Transport		E-mail notification when Event Occurs			
	Viewing		Remote Client, Internet Explorer, CMS			
Archive	Interface		USB 2.0x1ea, USB for PS2 Mousex1ea			
	Archive Device		Internal CD&DVDRW/ External HDD, CD&DVD-RW, Network, Memory Stick			
Control	Motion Detection		Each Control / Channel			
			Sensitivity : 3 Steps for each channel			
			Area : Programmable motion detection area for each camera individually			
	Alarm Hold Time		5~240 SEC			
	Event Log		Up to the 256 events(Alarm,Motion,Video&Power Loss,Power&Record On/Off)			
Controller		IR Remote Control/Mouse				
Pan/Tilt Camera		Control From RS485 Interface				
Others	HDD		Support Max. 2 HDDs up to 4TB			
	Power Source		DC 12V/5A			
	Power Consumption		60W			
	Operating Temperature		5~40℃(41~104F)			
	Relative Humidity		Maxium 80% Non-Considering			
	Weight	Net	6.0Kg			
		Gross(Box)	7.0Kg			
	Dimension	Net	450(W)*370(D)*90(H)mm			
Gross(Box)		500(W)*460(D)*190(H)mm				

PRODUCT WARRANTY

Manufacturer will repair or replace without charge any merchandise proved defective in main board or Workmanship for a period of one year after the date of shipment. But all goods requiring warranty repair shall be sent freight prepaid to us.

Exclusion and Limitations : Any of the following will void this warranty,

- I. Installation or use of the product other than strictly in accordance with the instructions contained in the product's instruction manual.
- II. If the product is subjected to operating conditions (including atmospheric, moisture and humidity conditions) outside of the acceptable conditions specified in the product's instruction manual.
- III. If the product is subjected to misuse or abuse.
- IV. If the product is subjected to electrical short circuits or transients, accident, fire, flood or Acts of God.
- V. Adjustment, maintenance or repair of the product other than in accordance with approved procedures.
- VI. Use of replacement parts other than those specified by Us.
- VII. All the accessories will be charged except defective units.

We assume no risk and shall be subject to no liability for damages or loss resulting from the specific use or application made of the products. Our liability for any claim whether based on breach of contract, negligence, infringement of any rights of any party or product liability, Relating to the products shall not exceed the price paid by the dealer to us for such products. In no event will manufacturer be liable for any special, incidental or consequential damages (including loss of use, loss of profit and claims of third parties) however caused, whether by the negligence of us or otherwise.

If a warranty repair is required, the dealer must contact us or to obtain a repair authorization number(RA), and provide the following information.

1. Model and serial number
2. System Version Information
3. Details of the defect or problem

If there is a dispute regarding the warranty of a product which does not fall under the warranty conditions stated above, please include a written explanation with the product when returned.

Method of return shipment shall be the same or equal to the method by which the item was received by us.

RETURNS

All goods returned for repair should be clearly identified with the assigned CA or RA number and requiring warranty repair shall be sent freight prepaid to us or round trip fare will be charge to the dealer if the warranty is expired.